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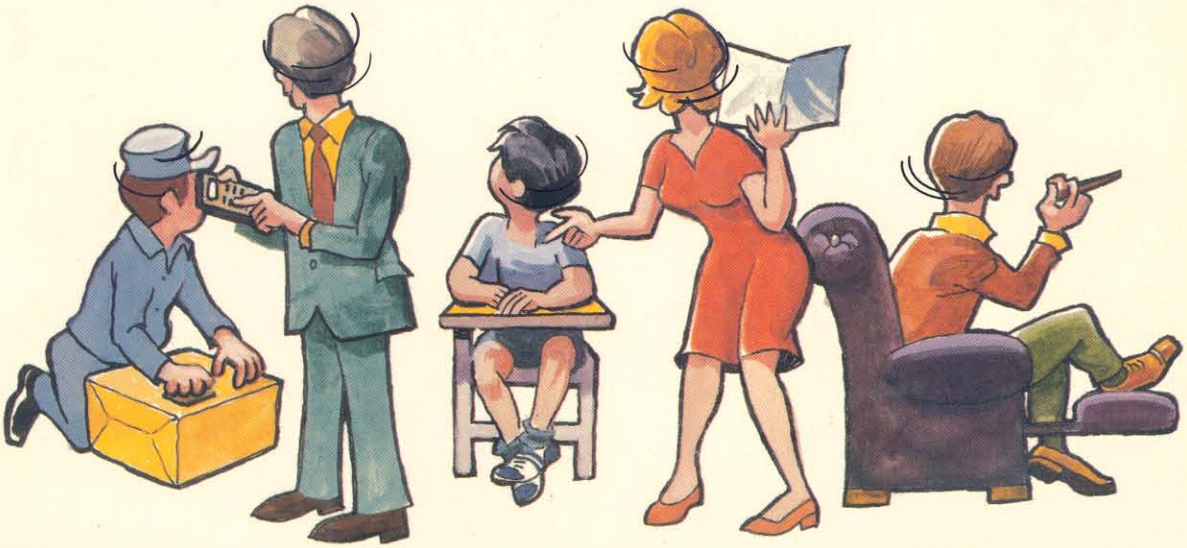

for Business, School and Home

For TRS-80 Level II BASIC

By J. Victor Nahigian & William S. Hodges

COMPUTER GAMES

for

business, school, and home for TRS-80 Level II Basic

J. VICTOR NAHIGIAN
and
WILLIAM S. HODGES

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CONTENTS

PREFACE

Until the last few decades, playing games was restricted to man's mind or to the use of crude machines. Today, however, with the rapid growth in the development and use of the computer, electronic games have grown in popularity. Programming digital computers has made it possible for us to enjoy complicated problem-solving activities as well as many games that formerly, and in reality, required great skill and many years of practice.

Computer game playing is commonly practiced in business, the academic field, and in homes throughout the world. The invention of minicomputers and/or microcomputers has enabled many thousands of people to enjoy the wonders of the digital computer. Playing computer games helps you to learn the computer language, and it also gives you more confidence in the use of the computer terminal.

Electronic teletype terminals and/or CRT screen units are used to communicate with the computer. A programming language is used along with the terminal. One such terminal language is BASIC. BASIC was originally created at Dartmouth College in order to help students use the computer. Today, BASIC is the most widely used time-sharing language. This particular programming language is also very easy to learn, and therefore it is well suited for computer games. Learning to play computer games in the BASIC Language is a relatively simple task, and programming into the computer can be accomplished without any difficulty.

We believe that these computer games in the BASIC language will be enjoyed by more and more people in the near future. The availability of personal computers to businesses, schools, and homes is now here—and at relatively inexpensive prices that seem to get lower all the time. Our book, *Computer Games for Business, School, and Home,* fills a need Victor and I knew existed, a need for a reference book containing an excellent selection of popular and new, exciting games, as well as a guide to BASIC programming. The games and sample runs were authored by Victor, and the book was compiled and edited by myself. We blended our talents to produce a book that we hope will bring you hours of entertaining fun for many years to come.

William S. Hodges

Games listed by program difficulty

BASKET

game of basketball

Description

Dr. James A. Naismith, an instructor at the International Young Men's Christian Association Training School (now Springfield College) in Springfield, Massachusetts, invented the game of basketball in 1891. Dr. Naismith created the game, using two empty peach baskets as goals and a soccer ball, in order to maintain the training school's athletic attendance in the winter months. Today basketball is enjoyed worldwide by both men and women and boys and girls playing at many different levels of skill.

The following program is for a game of basketball between two players using professional (American) rules. One player is from Los Angeles and the other from Boston. The game is divided into 2 halves of 24 minutes each with 12-minute quarters (periods). There are 10

offensive options and 3 movement options. The 10 offensive options include: pass, dribble, spin, between the legs, jump shot, hook shot, stuff shot, lay up, corner shot, and long bomb. The 3 movement options are: backward direction, no direction, and forward direction. The game is won or lost by using the offensive and movement options strategically against the opponent. A time clock is used in the action of the game to force the players to shoot within 24 seconds as done in professional basketball.

Variable list

C = Boston's variable rating
D = Los Angeles's variable rating
E = Boston's points
F = Los Angeles's points
H = Minutes passed in quarter
I = Probability of making shot
J = Number of turnovers
K = 1 for Boston's ball
    2 for Los Angeles's ball
P9 = Period of play
X = Option of move
Y = Direction of move
Z9 = Position of ball

Sample run

```
THIS IS A BASKETBALL GAME.

OPTIONS:

 1              PASS
 2              DRIBBLE
 3              SPIN
 4              BETWEEN THE LEGS
 5              JUMP SHOT
 6              HOOK SHOT
 7              STUFF SHOT
 8              LAY UP
 9              CORNER SHOT
 10             LONG BOMB

TO TYPE IN OPTION, USE THE THE FOLLOWING FORMAT:

? X,Y

WHERE X IS THE OPTION NUMBER AND
Y STANDS FOR THE FOLLOWING:

-1 FOR BACKWARD DIRECTION
0 FOR NO DIRECTION
1 FOR FORWARD DIRECTION
```

```
LOS ANGELES'S BALL

CLOCK 2 SECS.
?1,1
BALL NEAR THEIR TOP OF KEY
CLOCK 9 SECS.
?1,1
BALL NEAR THEIR TAKE OUT LINE
CLOCK 16 SECS.
?9,1
YOU MISSED
BOSTON'S BALL

CLOCK 3 SECS.
?1,1
BALL NEAR YOUR TOP OF KEY
CLOCK 9 SECS.
?1,1
BALL NEAR THEIR TOP OF KEY
CLOCK 13 SECS.
?2,1
BALL NEAR THEIR FOUL LINE
CLOCK 15 SECS.
?5,1
TWO POINTS

PERIOD:  1
TIME:   1 : 1

SCORE:  BOSTON - 2          LOS ANGELES - 0

LOS ANGELES'S BALL

CLOCK 3 SECS.
?1,1
BALL NEAR THE CENTER OF THE COURT
CLOCK 8 SECS.
?1,1
BALL NEAR THEIR FOUL LINE
CLOCK 10 SECS.
?5,1
TWO POINTS

PERIOD:  1
TIME:   1 : 21

SCORE:  BOSTON - 2          LOS ANGELES - 2

BOSTON'S BALL

CLOCK 6 SECS.
?1,1
BALL NEAR THE CENTER OF THE COURT
CLOCK 13 SECS.
?1,1
BALL NEAR THEIR FOUL LINE
CLOCK 19 SECS.
?5,1
TWO POINTS

PERIOD:  1
TIME:   1 : 59

SCORE:  BOSTON - 4          LOS ANGELES - 2

LOS ANGELES'S BALL
```

```
CLOCK 5 SECS.
?2,1
BALL NEAR YOUR TOP OF KEY
CLOCK 12 SECS.
?2,1
BALL NEAR THE CENTER OF THE COURT
CLOCK 19 SECS.
?2,1
BALL NEAR THEIR TOP OF KEY
CLOCK 21 SECS.
?2,1
BALL NEAR THEIR FOUL LINE
CLOCK 28 SECS.
BOSTON'S BALL

CLOCK 5 SECS.
?1,1
OUT OF BOUNDS
LOS ANGELES'S BALL

CLOCK 4 SECS.
?5,1
FOUL, TWO SHOTS
IT'S BAD
IT'S GOOD

PERIOD:  1
TIME:   3 : 13

SCORE:  BOSTON - 4          LOS ANGELES - 3

BOSTON'S BALL

CLOCK 4 SECS.
?2,1
BALL NEAR YOUR TOP OF KEY
CLOCK 10 SECS.
?10,1
HAVIN' TOO MUCH TO DRINK?   TRY AGAIN
CLOCK 10 SECS.
?1,0
BALL NEAR THE CENTER OF THE COURT
CLOCK 16 SECS.
?2,1
BALL NEAR THEIR TOP OF KEY
CLOCK 23 SECS.
?10,1
YOU MISSED
LOS ANGELES'S BALL

CLOCK 6 SECS.
?2,1
BALL NEAR YOUR FOUL LINE
CLOCK 9 SECS.
?1,1
BALL NEAR THE CENTER OF THE COURT
CLOCK 12 SECS.
?10,1
HAVIN' TOO MUCH TO DRINK?   TRY AGAIN
CLOCK 12 SECS.
?1,1
BALL NEAR THEIR FOUL LINE
CLOCK 16 SECS.
?5,1
TWO POINTS
```

```
PERIOD:  1
TIME:    4 : 31

SCORE:  BOSTON - 4          LOS ANGELES - 5

BOSTON'S BALL

CLOCK 6 SECS.
?
```

Program listing

```
90 CLS
100 PRINT:PRINT
110 PRINT "THIS IS A BASKETBALL GAME.":PRINT
120 I=-1
130 PRINT "OPTIONS:":PRINT
140 PRINT 1,"PASS":PRINT 2,"DRIBBLE":PRINT 3,"SPIN"
150 PRINT 4,"BETWEEN THE LEGS":PRINT 5,"JUMP SHOT":PRINT 6,"HOOK SHOT"
160 PRINT 7,"STUFF SHOT":PRINT 8,"LAY UP":PRINT 9,"CORNER SHOT"
170 PRINT 10,"LONG BOMB"
180 PRINT:PRINT "HIT ENTER TO CONTINUE";:INPUT A
185  CLS
190 PRINT "TO TYPE IN OPTION USE THE FOLLOWING FORMAT:":PRINT
200 PRINT "? X,Y":PRINT:PRINT "WHERE X IS THE OPTION NUMBER AND"
210 PRINT "Y STANDS FOR THE FOLLOWING:":PRINT
220 PRINT "-1 FOR BACKWARD DIRECTION"
230 PRINT "0 FOR NO DIRECTION"
240 PRINT "1 FOR FORWARD DIRECTION"
250 PRINT:PRINT
255 PRINT "HIT -ENTER- TO START";:INPUT A
257 CLS
260 C=(2*RND(0))+2:D=(2*RND(0))+2
270 PRINT:PRINT:H=0
280 K=INT(2*(RND(0))+1)
290 IF G=0 THEN 300
295 H=H+((G*2)/60):G=0
300 IF K=1 THEN 310
305 K=1:GOTO 320
310 K=2
320 IF K=1 THEN 330
325 PRINT "LOS ANGELES'S BALL":GOTO 340
330 PRINT "BOSTON'S BALL"
340 PRINT
350 IF H<12 THEN 400
355 P9=P9+1
360 IF P9=1 THEN 370
363 IF P9=2 THEN 380
365 IF P9=3 THEN 390
367 GOTO 1490
370 PRINT:PRINT "FIRST QUARTER IS OVER!":GOTO 270
380 PRINT:PRINT "HALF TIME!":GOTO 270
390 PRINT:PRINT "THIRD QUARTER IS OVER!":GOTO 270
400 REM MAIN SEQ.
410 G=G+INT(6*RND(0))+2
420 PRINT "CLOCK ";G;" SECS.":IF G<24 THEN 425
423 GOTO 290
425 INPUT X,Y
```

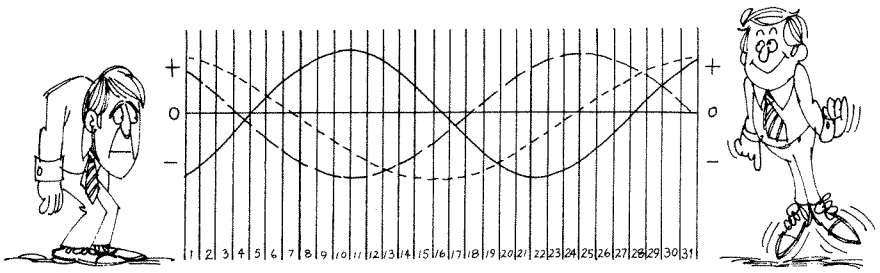
```
430 IF X=INT(X) THEN 435
433 GOTO 610
435 IF Y=INT(Y) THEN 440
437 GOTO 610
440 IF X<1 THEN 610
445 IF Y<-1 THEN 610
450 IF X>10 THEN 610
455 IF Y>1 THEN 610
460 ON X GOTO 490,490,510,510,530,550,570,590,550
490 IF RND(0)<.025 THEN 630
500 GOTO 930
510 IF RND(0)<.025 THEN 630
520 GOTO 500
530 IF RND(0)<.1 THEN 1110
540 GOTO 1270
550 IF RND(0)<1/15 THEN 1110
560 GOTO 540
570 IF RND(0)<.2 THEN 1110
580 GOTO 540
590 IF RND(0)<1/25 THEN 1110
600 GOTO 540
610 PRINT "WHAT DO YOU THINK YOU ARE, A GLOBETROTTER OR SOMETHING?"
620 GOTO 420
630 IF X=1 THEN 670
635 IF X=4 THEN 670
640 IF RND(0)<1/7 THEN 910
650 IF RND(0)<1/15 THEN 890
660 IF RND(0)<.1 THEN 870
670 PRINT "FOUL, ONE SHOT":I=3
680 IF K=1 THEN 700
690 N=D/5:GOTO 710
700 N=C/5
710 IF RND(0)>N THEN 830
720 PRINT "IT'S GOOD"
730 IF K=1 THEN 750
740 F=F+1:GOTO 760
750 E=E+1
760 H=H+((G*2)/60):G=0:IF H>12 THEN 765
763 GOTO 770
765 H=12
770 PRINT:M9=INT(H):S9=INT((H-M9)*60)
780 PRINT "PERIOD: ";P9+1:PRINT "TIME: ";M9;":";S9
790 PRINT:PRINT "SCORE:  BOSTON --- ";E,"LOS ANGELES --- ";F
800 PRINT
810 I=-1
820 GOTO 290
830 PRINT "NO GOOD"
840 IF RND(0)>.5 THEN 860
850 I=3:GOTO 960
860 I=-3:GOTO 290
870 PRINT "OFFENSIVE FOUL":J=J+1
880 GOTO 760
890 PRINT "CARRYING PENALTY":J=J+1
900 GOTO 760
910 PRINT "TRAVELING PENALTY":J=J+1
920 GOTO 760
930 I=I+SGN(Y)
940 IF X=1 THEN 945
943 GOTO 960
945 I=I+1:IF SGN(Y)=-1 THEN 950
947 GOTO 960
950 I=I-1
960 IF I<-3 THEN 1010
965 IF I>3 THEN 1010
970 PRINT "BALL NEAR ";
980 Z9=I+4
990 ON Z9 GOTO 1040,1050,1060,1070,1080,1090,1100
```

```
1010 PRINT "OUT OF BOUNDS":J=J+1
1020 I=-I
1030 GOTO 290
1040 PRINT "YOUR TAKE OUT LINE":GOTO 410
1050 PRINT "YOUR FOUL LINE":GOTO 410
1060 PRINT "YOUR TOP OF KEY":GOTO 410
1070 PRINT "THE CENTER OF THE COURT":GOTO 410
1080 PRINT "THEIR TOP OF KEY":GOTO 410
1090 PRINT "THEIR FOUL LINE":GOTO 410
1100 PRINT "THEIR TAKE OUT LINE":GOTO 410
1110 IF RND(0)).667 THEN 1130
1120 I=3:GOTO 1140
1130 I=2
1140 PRINT "FOUL, TWO SHOTS"
1150 FOR P=1 TO 2
1160 IF K=1 THEN 1180
1170 N=D/5:GOTO 1190
1180 N=C/5
1190 IF RND(0))N THEN 1260
1200 PRINT "IT'S GOOD"
1210 IF K=1 THEN 1230
1220 F=F+1:GOTO 1240
1230 E=E+1
1240 NEXT P
1250 GOTO 760
1260 PRINT "IT'S BAD":GOTO 1240
1270 P=3
1280 IF I(1 THEN 1285
1283 GOTO 1290
1285 IF 12-H)1 THEN 1370
1290 IF X=1 THE 1295
1293 GOTO 1300
1295 Q=((I*RND(0))+2)/5:GOTO 1390
1300 IF X=6 THEN 1305
1303 GOTO 1310
1305 Q=(I*RND(0)+2)/6:GOTO 1390
1310 IF X=7 THEN 1315
1313 GOTO 1320
1315 Q=(I*RND(0)+2)/3:GOTO 1390
1320 IF X=8 THEN 1325
1323 GOTO 1340
1325 IF I=1 THEN 1330
1327 Q=INT(I*RND(0)+2)/4:GOTO 1390
1330 Q=RND(0):GOTO 1390
1340 IF X=9 GOTO 1345
1343 GOTO 1360
1345 IF I=3 THEN 1350
1347 Q=0:GOTO 1390
1350 Q=(2*RND(0))/3:GOTO 1390
1360 Q=(I*RND(0)+2)/7:GOTO 1390
1370 PRINT "HAVIN' TOO MUCH TO DRINK?","TRY AGAIN..."
1380 GOTO 420
1390 IF RND(0)(Q THEN 1470
1400 PRINT "YOU MISSED"
1410 IF RND(0)(.75 THEN 1460
1420 PRINT "YOU GOT THE REBOUND BACK!"
1430 I=P:IF K=1 THEN 1440
1435 K=1:GOTO 1450
1440 K=2
1450 GOTO 290
1460 I=-P:GOTO 290
1470 PRINT "TWO POINTS":GOTO 1570
1480 I=-P:GOTOO 290
1490 PRINT:PRINT:PRINT:PRINT "THE GAME IS OVER ! ! !":PRINT
1500 PRINT "FINAL SCORE:  BOSTON --- ";E,"  LOS ANGELES --- ";F
1510 PRINT
1520 IF F)E THEN 1550
```

```
1525 IF F<E THEN 1540
1530 PRINT "OVERTIME!":H=7:GOTO 280
1540 PRINT "BOSTON WON!":GOTO 1560
1550 PRINT "LOS ANGELES WON!"
1560 PRINT:PRINT "NUMBER OF TURNOVERS IN THE GAME WAS ";J:END
1570 IF K=1 THEN 1580
1575 F=F+1:GOTO 1590
1580 E=E+1
1590 GOTO 730
1600 END
```

BIORHYTHM

daily biorhythmic chart



———— Physical cycle
– – – – Sensitive (emotional) cycle
- - - - - - - Cognitive (intellectual) cycle

Description

This program describes your daily biorhythmic behavioral patterns throughout the year.

Biorhythm is the rhythmic course of the life process of organisms. There are indications that the life of an individual moves in *physical* phases of 23 days that include basic bodily functions and the sense of physical fitness; in *sensitive* (emotional) phases of 28 days that include mental health, creativity, and mood; and in *cognitive* (intellectual) phases of 33 days that regulate alertness, memory, and receptivity to knowledge. In other words, everyone biologically has periods of high and low peaks in their everyday experiences.

The median (zero) line of the graph is when you have the most accidents. The high (+) periods are when you have the most energy, and the low (-) periods are regarded as periods when you should recuperate.

The program also is geared so that you may choose the number of days you want to know your biorhythmic patterns. And as an added feature, the day you were born is printed along with the number of days that have passed to the present date.

Program notes

You should note that line 1040 jumps to itself. This is done so that you can roll up the paper and tear it accordingly in order to make individual copies of your biorhythmic pattern.

Variable list

A( ) = Cumulative number of days at the end of the month
C5 = Location to cognitive cycle

D9 = Number of days to graph
D( ) = Number of days in each month
J1 = Current day that's printing
M1, D1, Y2 = Birthdate (month, day, year)
M2, D2, Y3 = Today's date (month, day, year)
M9 = Current month that's printing
N( ) = Person's name
P5 = Location to print physical cycle
S5 = Location to print sensitivity cycle
V = Number of days since birthdate
Y9 = Current year that's printing

Sample run

```
ENTER TODAY'S DATE?  (MM,DD,YYYY)?4,1,1978
ENTER BIRTHDATE?  (MM,DD,YYYY)?4,12,1954
ENTER NAME? JOHN G. DOE

HOW MANY DAYS TO GRAPH?  (ALIGN PAPER, HIT ENTER)?15


THE MEDIAN LINE (0) IS YOUR CRITICAL POINT AND IS
WHEN MOST ACCIDENTS OCCUR.  THE HIGH PERIODS (+) ARE
WHEN YOU HAVE THE MOST ENERGY AND THE LOW PERIODS (-)
ARE REGARDED AS RECUPERATIVE PERIODS.


GRAPH SYMBOLS:

I:  MEDIAN LINE          (0 LINE)
P:  PHYSICAL CYCLE       (23-DAY)
S:  SENSITIVITY CYCLE    (28-DAY)
C:  COGNITIVE CYCLE      (33-DAY)



YOUR BIRTHDAY IS APRIL 12  1954
IT WAS A MONDAY AND OCCURRED 8755 DAYS ( 23.98 YEARS) AGO.

HERE IS THE GRAPH FOR JOHN G. DOE STARTING AT APRIL 1  1978
AND ENDING AT APRIL 15  1978


      DATE                (-)                (0)                (+)

SAT  APR 1  1978          S P                 I                   C
SUN  APR 2  1978         SP                   I                 C
MON  APR 3  1978        SP                    I               C
TUE  APR 4  1978         P                    I             C
WED  APR 5  1978          SP                  I          C
THU  APR 6  1978            SP                I     C
FRI  APR 7  1978                S P           IC
SAT  APR 8  1978.                   S  P  C I
SUN  APR 9  1978                      CS    P
MON  APR 10  1978                   C        S   P
TUE  APR 11  1978                 C          I   S     P
```

```
                                   ** HAPPY 24 BIRTHDAY **

WED   APR 12   1978                  C                  I        S       P
THU   APR 13   1978                C                    I             S    P
FRI   APR 14   1978              C                      I                  S  P
SAT   APR 15   1978              C                      I                     SP
```

Program listing

BIORYT

```
90 CLS
100 REM   JVN-2/10/76-VER 1.9
110 DIM A(12),D(12),N(25)
120 FOR I=1 TO 12:READ A(I):NEXT I
130 FOR I=1 TO 12:READ D(I):NEXT I
140 DATA 0,31,59,90,120,151,181,212,243,273,304,334
150 DATA 31,28,31,30,31,30,31,31,30,31,30,31
160 P=6.28318
180 PRINT "ENTER TODAY'S DATE...(MM,DD,YYYY) ";:INPUT M,D,Y
190 M2=M:D2=D:Y3=Y
200 Y5=Y
210 GOSUB 300
220 Z=T
230 PRINT "ENTER BIRTHDATE...(MM,DD,YYYY) ";:INPUT M,D,Y
240 M1=M:D1=D:Y2=Y
250 GOSUB 300
260 V=T-Z
270 V=ABS(V)
280 PRINT "ENTER NAME";:INPUT W$
290 GOTO 480
300 Y1=Y-1800
310 Q1=INT(Y1/4)
320 Q2=INT(Q1/25)
330 Q3=INT((Y1+200)/400)
340 K=0
350 IF Q1*4=Y1 THEN 360
355 GOTO 390
360 IF Q2*100=Y1 THEN 370
365 GOTO 390
370 IF Q3*400-200=Y1 THEN 380
375 GOTO 390
380 K=1
390 T=365*Y1+Q1-Q2+Q3-K
400 T=T+A(M)+D-1
410 IF M<3 THEN 430
420 T=T+K
430 IF INT(Y1/4)=Y1/4 THEN 440
435 GOTO 460
440 IF M>2 THEN 460
450 T=T-1
460 J=T-7*INT(T/7)
470 RETURN
480 N(X)=0
490 PRINT:PRINT
500 PRINT "HOW MANY DAYS TO GRAPH?  (ALIGN PAPER, HIT ENTER)";
```

```
510 INPUT D9:PRINT:PRINT
515 CLS
520 PRINT "THE MEDIAN LINE (0) IS YOUR CRITICAL POINT AND IS"
530 PRINT "WHEN MOST ACCIDENTS OCCUR.  THE HIGH PERIODS (+) ARE"
540 PRINT "WHEN YOU HAVE THE MOST ENERGY AND THE LOW PERIODS (-)"
550 PRINT "ARE REGARDED AS RECUPERATIVE PERIODS."
560 PRINT:PRINT
570 PRINT "GRAPHIC SYMBOLS:":PRINT
580 PRINT "I:  MEDIAN LINE           (0 LINE)"
590 PRINT "P:  PHYSICAL CYCLE        (23-DAY)"
600 PRINT "S:  SENSITIVITY CYCLE     (28-DAY)"
610 PRINT "C:  COGNITIVE CYCLE       (33-DAY)"
620 PRINT:PRINT:PRINT "HIT -ENTER- TO CONTINUE...";:INPUT W
625 CLS
630 PRINT "YOUR BIRTHDAY IS ";:A9=M1:GOSUB 1050:PRINT D1;Y2
640 PRINT "IT WAS A ";:B9=J+1:GOSUB 1170
650 PRINT " AND OCCURRED";V;" DAYS (";INT((V/365)*100)/100;" YEARS) AGO."
660 PRINT
670 PRINT "HERE IS THE GRAPH FOR ";W$
680 PRINT "START AT ";:A9=M2:GOSUB 1050:PRINT D2;Y3
690 PRINT "AND ENDED AT ";
700 M9=M2:D8=D2+D9-1:Y9=Y3
710 IF M9>12 THEN 715
713 GOTO 720
715 M9=1:Y9=Y9+1
720 IF M9=2 THEN 730
725 GOTO 740
730 IF INT(Y9/4)=Y9/4 THEN 735
733 GOTO 740
735 K=1
740 IF D8>D(M9)+K THEN 750
745 GOTO 770
750 D8=D8-(D(M9)+K):M9=M9+1:K=0
760 GOTO 710
770 A9=M9:GOSUB 1050:PRINT D8;Y9
780 PRINT:PRINT:PRINT "HIT -ENTER- TO START GRAPH...";:INPUT W
785 CLS
790 PRINT TAB(7);"DATE";TAB(25);"(-)";TAB(43);"(0)";
800 PRINT TAB(61);"(+)"
810 PRINT
820 J1=V+J:J1=J1-7*INT(J1/7):D2=D2-1:J1=J1-1:V=V-1:K=0
830 FOR I=1 TO D9:V=V+1:D2=D2+1:J1=J1+1:IF M2=2 THEN 840
835 GOTO 850
840 IF INT(Y3/4)=Y3/4 THEN 845
843 GOTO 850
845 K=1
850 IF D2>D(M2)+K THEN 860
855 GOTO 870
860 M2=M2+1:D2=1
870 IF J1<7 THEN 880
875 J1=0
880 IF M2>12 THEN 890
885 GOTO 900
890 PRINT:PRINT TAB(33);"** HAPPY NEW YEAR **":PRINT:M2=1:Y3=Y3+1
900 IF J1+1=3 THEN 905
903 GOTO 920
905 IF D2=13 THEN 908
907 GOTO 920
908 PRINT:PRINT TAB(22);
910 PRINT "** BEWARE ! !  FRIDAY THE THIRTEENTH **":PRINT
920 IF M2=M1 THEN 925
923 GOTO 940
925 IF D2=D1 THEN 930
927 GOTO 940
930 PRINT:PRINT TAB(33);"** HAPPY";ABS(Y3-Y2);"BIRTHDAY **":PRINT
940 E9=J1+1:GOSUB 1360
950 PRINT "  ";:C9=M2:GOSUB 1240:PRINT D2;Y3;
```

```
960 X=23:GOSUB 1430:P5=X:X=28:GOSUB 1430:S5=X:X=33:GOSUB 1430:C5=X
970 N=0:FOR L=19 TO 65:PRINT TAB(L);
980 IF P5=L THEN 985
983 GOTO 990
985 PRINT "P";:GOTO 1020
990 IF S5=L THEN 995
993 GOTO 1000
995 PRINT "S";:GOTO 1020
1000 IF C5=L THEN 1005
1003 GOTO 1010
1005 PRINT "C";:GOTO 1020
1010 IF 44=L THEN 1015
1013 GOTO 1030
1015 PRINT "I";
1020 N=N+1:IF N=4 THEN 1025
1023 GOTO 1030
1025 L=100
1030 NEXT L:PRINT:NEXT I
1040 GOTO 1040
1050 IF A9=1 THEN PRINT "JANUARY";:RETURN
1060 IF A9=2 THEN PRINT "FEBRUARY";:RETURN
1070 IF A9=3 THEN PRINT "MARCH";:RETURN
1080 IF A9=4 THEN PRINT "APRIL";:RETURN
1090 IF A9=5 THEN PRINT "MAY";:RETURN
1100 IF A9=6 THEN PRINT "JUNE";:RETURN
1110 IF A9=7 THEN PRINT "JULY";:RETURN
1120 IF A9=8 THEN PRINT "AUGUST";:RETURN
1130 IF A9=9 THEN PRINT "SEPTEMBER";:RETURN
1140 IF A9=10 THEN PRINT "OCTOBER";:RETURN
1150 IF A9=11 THEN PRINT "NOVEMBER";:RETURN
1160 PRINT "DECEMBER";:RETURN
1170 IF B9=1 THEN PRINT "WEDNESDAY";:RETURN
1180 IF B9=2 THEN PRINT "THURSDAY";:RETURN
1190 IF B9=3 THEN PRINT "FRIDAY";:RETURN
1200 IF B9=4 THEN PRINT "SATURDAY";:RETURN
1210 IF B9=5 THEN PRINT "SUNDAY";:RETURN
1220 IF B9=6 THEN PRINT "MONDAY";:RETURN
1230 PRINT "TUESDAY";:RETURN
1240 IF C9=1 THEN PRINT "JAN";:RETURN
1250 IF C9=2 THEN PRINT "FEB";:RETURN
1260 IF C9=3 THEN PRINT "MAR";:RETURN
1270 IF C9=4 THEN PRINT "APR";:RETURN
1280 IF C9=5 THEN PRINT "MAY";:RETURN
1290 IF C9=6 THEN PRINT "JUN";:RETURN
1300 IF C9=7 THEN PRINT "JUL";:RETURN
1310 IF C9=8 THEN PRINT "AUG";:RETURN
1320 IF C9=9 THEN PRINT "SEP";:RETURN
1330 IF C9=10 THEN PRINT "OCT";:RETURN
1340 IF C9=11 THEN PRINT "NOV";:RETURN
1350 PRINT "DEC";:RETURN
1360 IF E9=1 THEN PRINT "WED";:RETURN
1370 IF E9=2 THEN PRINT "THU";:RETURN
1380 IF E9=3 THEN PRINT "FRI";:RETURN
1390 IF E9=4 THEN PRINT "SAT";:RETURN
1400 IF E9=5 THEN PRINT "SUN";:RETURN
1410 IF E9=6 THEN PRINT "MON";:RETURN
1420 PRINT "TUE";:RETURN
1430 X=INT(SIN((V/X-INT(V/X))*P)*18)+44
1440 RETURN
1450 END
```

BLACKJACK

game of blackjack

Description

Try testing "Lady Luck" with this game! This program simulates a Las Vegas version of the card game of Blackjack. As many as 4 people can play Blackjack against a casino dealer (the computer). You each can bet what you want. All rules of Las Vegas Blackjack are programmed into this game. For example, the dealer deals 2 cards to each player. The first card is dealt face down; the second card is dealt face up. Finally the dealer deals 2 cards to himself in the same fashion. The cards dealt face down are called *hole cards*. These cards should never be seen by the opposition (the dealer and the other players).

A hand consisting of 2 cards, one of which is an Ace and the other a Ten, is a *Blackjack* (or a *Natural*). Face cards (King, Queen, and Jack) also count as 10 and can be used to obtain a Blackjack with an Ace. The ace counts as either a 1 or an 11. Obviously, a Blackjack has a numerical value of 21.

When the dealer's up card is an Ace or a Ten, he immediately must inspect his hole card. If the value of his hand is 21, then he turns his hole card up. If the dealer's hand is 17 or more, then he is required by the rules of the game to stand. The dealer has to draw a card (called a hit) if his hand totals 16 or less.

A player may decide to *double down*. Double downing occurs when

the initial bet is doubled by adding an equal amount which is placed to the left or right of the initial bet. The hole card is placed on the table in front of the bet, face up. You then get 1 more card, face down; therefore, you create a 3-card hand. The next move is to compare the total of your hand with the value of the dealer's hand. A player should not double on any hand (total cards) whose value exceeds 11. A card hand totaling 11 is a good hand to double down on.

When a player *splits* a hand, he has been dealt his first 2 cards of the same count (value). He turns both face up. One card is dealt, face down, on each of the 2 cards. The player now has 2 card hands to play and bet on. The hand on the player's right should be played first. You cannot double down on splits, and if you split Aces you are allowed only 1 card per hand.

The dealer will ask for an insurance bet when he shows an Ace. It should be ½ of your original bet. Insurance pays 1 to 1 if you win. If you get Blackjack then insurance pays 1-1/2 to 1.

Blackjack probability table

2-card total	*Combinations*	*Total number of combinations*	*%*	*Odds (hands)*
21	Ace + 10	64	4.8	1 in 21
20	10 + 10 9 + Ace	136	10.2	1 in 10
19	10 + 9 Ace + 8	80	6.0	1 in 17
18	10 + 8 9 + 9 Ace + 7	86	6.5	1 in 15
17	10 + 7 9 + 8 Ace + 6	96	7.2	1 in 14
16	10 + 6 9 + 7 8 + 8	86	6.5	1 in 15
15	10 + 5 9 + 6 8 + 7	96	7.2	1 in 13
14	10 + 4 9 + 5 8 + 6 7 + 7	102	7.7	1 in 13
13	10 + 3 9 + 4 8 + 5 7 + 6	112	8.4	1 in 12
12	10 + 2 9 + 3 8 + 4 7 + 5 6 + 6	118	8.9	1 in 11

Blackjack probability table (continued)

2-card total	*Combinations*	*Total number of combinations*	*%*	*Odds (hands)*
11	9 + 2 8 + 3 7 + 4 6 + 5	64	4.8	1 in 21
10	8 + 2 7 + 3 6 + 4 5 + 5	54	4.1	1 in 25
9	7 + 2 6 + 3 5 + 4	48	3.7	1 in 27
8	6 + 2 5 + 3 4 + 4	38	2.9	1 in 35
7	5 + 2 4 + 3	32	2.4	1 in 41
6	Ace + 5 4 + 2 3 + 3	38	2.9	1 in 35
5	Ace + 4 3 + 2	32	2.4	1 in 41
4	Ace + 3 2 + 2	22	1.7	1 in 60
3	Ace + 2	16	1.2	1 in 83
2	Ace + Ace	6	.5	1 in 221

Variable list

A( ) = Amount of aces in hand
A(1,) = Regular hand
A(2,) = Split hand

B( ) = Bet for each hand
B(1,) = Regular hand
B(2,) = Split hand

K( ) = 0 = Person can't split
1 = Person can split

M( ) = Amount of money owned by each person

Q = Number of player's

S = Hand being used

S(S,C) = 0 = Card hasn't been used
1 = Card has been used
Where S is suit number
C is card number

T( ) = Total points in each person's hand
T(1,) = Regular hand
T(2,) = Split hand

Sample run

```
THIS IS A FOUR PLAYER BLACKJACK GAME.
HOW MANY WISH TO PLAY?4


PERSON 1 HAS $ 0
PERSON 2 HAS $ 0
PERSON 3 HAS $ 0
PERSON 4 HAS $ 0


CARDS ARE RESHUFFLED.

PERSON 1 WHAT IS YOUR BET?10
PERSON 2 WHAT IS YOUR BET?14
PERSON 3 WHAT IS YOUR BET?8
PERSON 4 WHAT IS YOUR BET?17


*** PERSON 1

FIRST CARD IS  3 OF DIAMONDS
SECOND CARD IS QUEEN OF CLUBS

*** PERSON 2

FIRST CARD IS ACE OF SPADES
SECOND CARD IS  3 OF SPADES

*** PERSON 3

FIRST CARD IS ACE OF DIAMONDS
SECOND CARD IS QUEEN OF DIAMONDS

*** PERSON 4

FIRST CARD IS  6 OF SPADES
SECOND CARD IS  4 OF DIAMONDS

***** DEALER SHOWS  5 OF SPADES


*** PERSON 1

YOUR TOTAL IS 13
DOUBLE-DOWN? (1 FOR YES)?0
HIT? (1 FOR YES)?1

YOU PICKED THE  2 OF SPADES
YOUR TOTAL IS 15
HIT? (1 FOR YES)?0

YOUR TOTAL IS 15
```

```
*** PERSON 2

YOUR TOTAL IS 14
DOUBLE-DOWN? (1 FOR YES)?0
HIT? (1 FOR YES)?1

YOU PICKED THE  6 OF DIAMONDS
YOUR TOTAL IS 20
HIT? (1 FOR YES)?0

YOUR TOTAL IS 20

*** PERSON 3

YOUR TOTAL IS 21

*** YOU HAVE BLACKJACK! ***


*** PERSON 4

YOUR TOTAL IS 10
DOUBLE-DOWN? (1 FOR YES)?1

YOUR DOUBLE-DOWN CARD IS  5 OF HEARTS

YOUR TOTAL IS 15

DEALER HAD A  2 OF CLUBS IN THE HOLE.
DEALER PICKED A  8 OF HEARTS
DEALER PICKED A  9 OF DIAMONDS

THE DEALERS TOTAL IS 24


PERSON 1 WON $ 10
PERSON 2 WON $ 14
PERSON 3 WON $ 12
PERSON 4 WON $ 34


ANOTHER GAME?  (1 FOR YES)?0


PERSON          WINNINGS
   1            $ 10
   2            $ 14
   3            $ 12
   4            $ 34
DEALER          $-70

READY.
```

Program listing

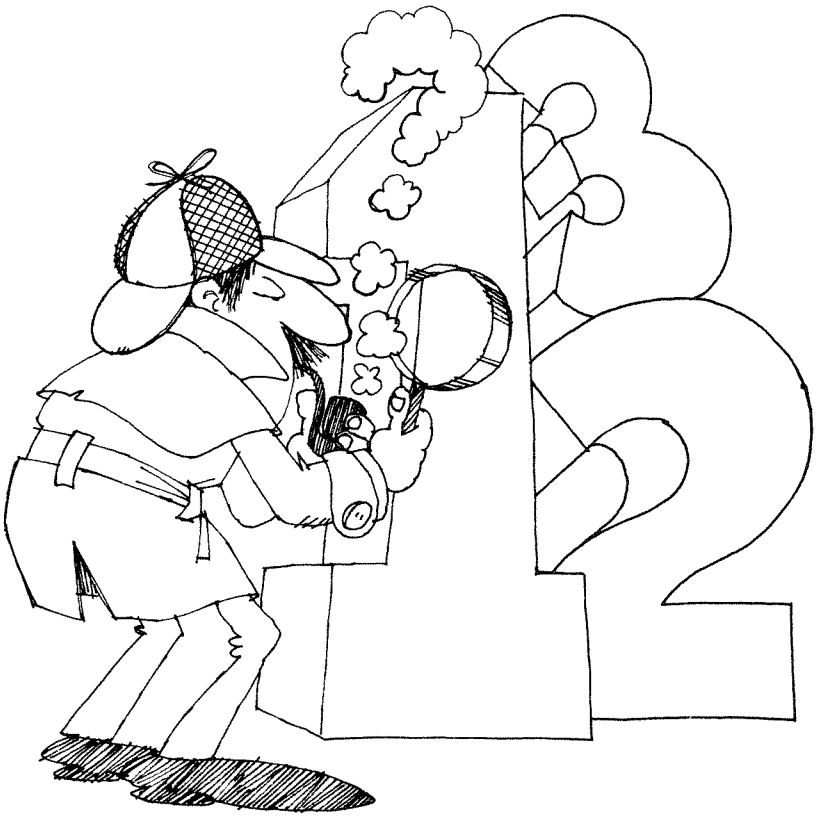
```
BLACKJ


100 DIM S(4,13),K(4),T(2,5),A(2,5),B(2,4),M(4)
105 CLS
110 PRINT:PRINT
```

```
120 PRINT "THIS IS A FOUR PLAYER BLACKJACK GAME."
130 C=52:PRINT "HOW MANY WISH TO PLAY";:INPUT Q
140 PRINT:PRINT
145 CLS
150 FOR I=1 TO Q:PRINT "PERSON ";I;" HAS $";M(I):NEXT I
160 PRINT:IF C(51-((Q+1)*5) THEN 170 ELSE GOSUB 1290
170 FOR I=1 TO 5:FOR S=1 TO 2
180 T(S,I)=0:A(S,I)=0:NEXT S:NEXT I
190 S=1:FOR I=1 TO Q
200 PRINT "PERSON ";I;" WHAT IS YOUR BET";:INPUT B(1,I)
210 B(2,I)=0:NEXT I:FOR W=1 TO 750:NEXT W:CLS
220 FOR I=1 TO Q
230 PRINT "*** PERSON ";I:PRINT
240 PRINT "FIRST CARD IS ";:GOSUB 1120
250 GOSUB 1140:GOSUB 1190:PRINT
260 Y1=Y:GOSUB 1230
270 PRINT "SECOND CARD IS ";:GOSUB 1120
280 GOSUB 1140:GOSUB 1190:PRINT:PRINT:PRINT "HIT -ENTER- TO CONTINUE";:INPUT W
285 CLS
290 K(I)=0:IF Y1=Y THEN K(I)=1 ELSE 300
300 GOSUB 1230:NEXT I
310 GOSUB 1120:X2=X:Y2=Y:I=5:GOSUB 1230
320 PRINT "***** ";
330 GOSUB 1120:PRINT "DEALER SHOWS ";:GOSUB 1140
340 GOSUB 1190:GOSUB 1230:PRINT:PRINT
350 IF Y=11 THEN 360
355 IF T(1,5)=21 THEN 410 ELSE 470
360 PRINT "INSURANCE?  (1 FOR YES)";:INPUT B:IF B=0 THEN 400
370 PRINT "PERSON NUMBER?  (0 TO STOP)";:INPUT B
380 IF B=0 THEN 400 ELSE PRINT "PERSON ";B;", HOW MUCH DO YOU BET";
390 INPUT B(2,B):IF B(2,B)(0 THEN 380 ELSE 370
400 IF T(1,5)=21 THEN PRINT ELSE 450
410 PRINT "*** DEALER HAS BLACKJACK! ***":PRINT
420 PRINT:FOR I=1 TO Q:IF B(2,I)=0 THEN 440
430 B(1,I)=B(1,I)-(B(2,I)*2)
440 NEXT I:GOTO 860
450 PRINT:PRINT "DEALER DOESN'T HAVE BLACKJACK.":PRINT
460 FOR I=1 TO Q:M(I)=M(I)-B(2,I):NEXT I
470 B=0:D=0:FOR I=1 TO Q:PRINT:PRINT "*** PERSON ";I
480 PRINT:L9=1
490 IF K(I)=0 THEN 610 ELSE PRINT "DO YOU WANT TO SPLIT?  (1 FOR YES)";
500 INPUT L8:IF L8=0 THEN 610 ELSE B(2,I)=B(1,I)
510 IF T(1,I)=12 THEN 515 ELSE 550
515 IF A(1,I)=0 THEN 550
520 T(1,I)=11:T(2,I)=11
530 FOR S=1 TO 2:PRINT:GOSUB 1120:PRINT "HAND ";S;" PICKED A ";
540 GOSUB 1140:GOSUB 1190:PRINT:GOSUB 1230:NEXT S:PRINT:GOTO 770
550 T(1,I)=T(1,I)/2:T(2,I)=T(1,I):FOR S=1 TO 2
560 GOSUB 1120:PRINT "HAND ";S;" PICKED A ";:GOSUB 1140:GOSUB 1190
570 GOSUB 1230:PRINT "   TOTAL IS ";T(S,I):IF T(S,I))20 THEN 600
580 IF D9=1 THEN 600 ELSE PRINT "HIT?  (1 FOR YES)";
590 INPUT L8:IF L8=1 THEN 560
600 PRINT:NEXT S:GOTO 770
610 S=1:PRINT "YOUR TOTAL IS ";T(1,I):IF L9=1 THEN 620 ELSE 700
620 IF T(S,I)=21 THEN PRINT ELSE 650
630 PRINT "*** YOU HAVE BLACKJACK! ***":PRINT
640 B(S,I)=B(S,I)+(B(S,I)/2):T(S,I)=-1:GOTO 770
650 PRINT "DOUBLE-DOWN?  (1 FOR YES)";
660 INPUT L8:IF L8=1 THEN PRINT ELSE 700
670 PRINT "YOUR DOUBLE DOWN CARD IS ";
680 GOSUB 1120:GOSUB 1140:GOSUB 1190:GOSUB 1230
690 PRINT:B(2,I)=B(S,I)*2:GOTO 750
700 PRINT "HIT?  (1 FOR YES)";:INPUT L7
710 IF L7=1 THEN PRINT ELSE 750
720 GOSUB 1120:PRINT "YOU PICKED THE ";:GOSUB 1140
730 GOSUB 1190:GOSUB 1230:L9=0
740 PRINT:IF T(S,I)(21 THEN 610
750 PRINT:PRINT "YOUR TOTAL IS ";T(1,I)
```

```
760 IF T(SS,I)<22 THEN 770 ELSE B=B+1
770 PRINT:PRINT "HIT -ENTER- TO CONTINUE";:INPUT W
775 CLS:NEXT I:PRINT
780 X=X2:Y=Y2:PRINT "DEALER HAD A ";
790 GOSUB 1140:GOSUB 1190:PRINT " IN THE HOLE."
800 S=1:I=5:IF T(S,I)>16 THEN  850
810 IF D+Q=B THEN 850
820 GOSUB 1120:PRINT "DEALER PICKED A ";
830 GOSUB 1140:GOSUB 1190:GOSUB 1230
840 PRINT:GOTO 800
850 PRINT:PRINT "THE DEALERS TOTAL IS ";T(S,I)
860 PRINT:PRINT
870 FOR I=1 TO Q:FOR S=1 TO 2
880 IF T(S,I)=-1 THEN 930
890 IF T(S,I)=0 THEN 1010
900 IF T(S,I)>21 THEN 990
910 IF T(1,5)>21 THEN 930
920 IF T(S,I)>T(1,5) THEN 930 ELSE 960
930 PRINT "PERSON ";I;" WON $";B(S,I)
940 M(I)=M(I)+B(S,I)
950 GOTO 1010
960 IF T(S,I)=T(1,5) THEN 970 ELSE 990
970 PRINT "PERSON ";I;" HAD A DRAW WITH THE DEALER."
980 GOTO 1010
990 PRINT "PERSON ";I;" LOST $";B(S,I)
1000 M(I)=M(I)-B(S,I)
1010 NEXT S:NEXT I
1020 PRINT:PRINT:PRINT
1030 PRINT "ANOTHER GAME?   (1 FOR YES)";
1040 INPUT B:PRINT:IF B=1 THEN 145
1050 CLS
1060 PRINT "PERSON","WINNINGS"
1070 B=0:FOR I=1 TO Q
1080 PRINT "   ";I,"$";M(I)
1090 B=B-M(I):NEXT I
1100 PRINT "DEALER","$";B
1110 PRINT:PRINT:PRINT:GOTO 1310
1120 X=INT(4*RND(0))+1:Y=INT(13*RND(0))+1
1130 IF S(X,Y)=1 THEN 1120 ELSE S(X,Y)=1:C=C+1:RETURN
1140 IF Y=1 THEN 1145 ELSE 1150
1145 PRINT "ACE ";:RETURN
1150 IF Y=11 THEN 1155 ELSE 1160
1155 PRINT "JACK ";:RETURN
1160 IF Y=12 THEN 1165 ELSE 1170
1165 PRINT "QUEEN ";:RETURN
1170 IF Y=13 THEN 1175 ELSE 1180
1175 PRINT "KING ";:RETURN
1180 PRINT Y;:RETURN
1190 IF X=1 THEN 1195 ELSE 1200
1195 PRINT "OF SPADES ";:RETURN
1200 IF X=2 THEN 1205 ELSE 1210
1205 PRINT "OF CLUBS ";:RETURN
1210 IF X=3 THEN 1215 ELSE 1220
1215 PRINT "OF HEARTS ";:RETURN
1220 PRINT "OF DIAMONDS ";:RETURN
1230 IF Y<11 THEN 1240 ELSE Y=10
1240 IF Y=1 THEN 1245 ELSE 1250
1245 Y=11:A(S,I)=A(S,I)+1
1250 T(S,I)=T(S,I)+Y
1260 IF T(S,I)>21 THEN 1265 ELSE 1280
1265 IF A(S,I)=0 THEN 1280
1270 A(S,I)=A(S,I)-1:T(S,I)=T(S,I)-10
1280 RETURN
1290 FOR X=1 TO 4:FOR Y=1 TO 13:S(X,Y)=0:NEXT Y:NEXT X:C=0
1300 PRINT:PRINT "CARDS ARE RESHUFFLED.":PRINT:RETURN
1310 END
```

BOGGLE

number guessing game



Description

This game is one of logic. You try to guess the number (0–5555) the computer has selected based on clues given to you by the computer. A clue is given to you after each of your guesses.

The clues will be "Black" and/or "White." If the computer says "Black," then that means that one of the digits is correct but not in the right order. If the computer says "White," then you have a correct digit in the correct order. It is up to you to figure what number is correct.

There are two versions of this game. The beginner's version will not have the same digit used twice in the number. The expert's, on the other hand, can have as many as 4 of the digits the same.

One to 10 people can play. Try to see who can do the best. You will be graded on the total number of guesses it takes to obtain the number. Grades range from excellent to poor depending on a predetermined average.

Variable list

C( ) = Flag to make sure two same digits aren't used in the number (beginner's version)

G = Person's guess

K( ) = Flag to determine if digit in guessed number has been processed

Q = Number of player's

S( ) = Flag to determine if digit in picked number has been processed [The program analyzes your number randomly. It would be easy to guess the number if the program sequentially told you what digits are correct.]

T( ) = Total guesses for each player, all games

Z( ) = Digits in number
Z(1,A) = Position A of digit in number picked
Z(2,A) = Position A of digit in number guessed

Sample run

```
THIS IS THE GAME OF MIND BOGGLER.


DO YOU WANT THE INSTRUCTIONS?  (1=YES)?1

I AM GOING TO PICK A NUMBER BETWEEN 0000 - 5555.
YOU ARE TO TRY TO GET THAT NUMBER IN THE MINIMAL
AMOUNT OF GUESSES.

EVERY TIME YOU GUESS A NUMBER I WILL GIVE YOU CLUES AS TO
HOW CLOSE YOU ARE TO THE NUMBER I GUESSED.  THE CLUES WILL
BE 'BLACK' AND/OR 'WHITE'.  IF I SAY 'BLACK', THEN THAT MEANS THAT
ONE OF THE DIGITS IS CORRECT BUT NOT IN THE RIGHT ORDER.  IF I SAY
'WHITE' THEN YOU HAVE A CORRECT DIGIT IN THE CORRECT ORDER.  IT
IS UP TO YOU TO LOGICALLY FIGURE WHAT NUMBERS ARE CORRECT.

FOR EXAMPLE:    THE NUMBER IS 5210

YOU GUESS:    2413

YOU WOULD GET A 'BLACK' BECAUSE THE NUMBER 2 IS CORRECT BUT IN THE
WRONG ORDER AND A 'WHITE' BECAUSE YOU GUESSED THE NUMBER 1 WHICH WAS
THE CORRECT NUMBER IN THE CORRECT ORDER.

THERE ARE TWO VERSIONS OF THIS GAME.  THE BEGINNERS VERSION
WILL NOT HAVE THE SAME DIGIT USED TWICE IN THE NUMBER.  THE
EXPERTS ON THE OTHER HAND CAN HAVE AS MANY AS FOUR OF THE
DIGITS THE SAME.

ONE TO TEN PEOPLE CAN PLAY.  TRY TO SEE WHO CAN DO THE BEST.

********** GOOD LUCK **********

ARE YOU AN EXPERT (TYPE 1) OR A BEGINNER (TYPE 2)?2


HOW MANY WISH TO PLAY?2
```

```
ATTENTION PERSON 1 , I AM PICKING THE NUMBER.


WHAT IS YOUR GUESS?1234
WHITE BLACK WHITE
WHAT IS YOUR GUESS?0123
BLACK BLACK
WHAT IS YOUR GUESS?125
BLACK BLACK WHITE
WHAT IS YOUR GUESS?1245

VERY GOOD, YOU GOT THE NUMBER IN 4 GUESSES.



ATTENTION PERSON 2 , I AM PICKING THE NUMBER.


WHAT IS YOUR GUESS?1234
BLACK BLACK BLACK
WHAT IS YOUR GUESS?1245
WHITE BLACK BLACK BLACK
WHAT IS YOUR GUESS?5124
BLACK BLACK BLACK BLACK
WHAT IS YOUR GUESS?2415

VERY GOOD, YOU GOT THE NUMBER IN 4 GUESSES.


AT THE END OF ROUND 1

PERSON          TOTAL           AVERAGE         CATEGORY

 1               4               4              EXCELLENT
 2               4               4              EXCELLENT


ANOTHER ROUND?  (1=YES)?0


READY.
```

Program listing

BOGGLE

```
100 DIM T(10),S(4),C(6),Z(2,4),K(4)
110 CLS
120 PRINT "THIS IS THE GAME OF MIND BOGGLER.":PRINT:PRINT
130 PRINT "DO YOU WANT INSTRUCTIONS ";:INPUT A$
135 IF A$="YES" THEN PRINT:GOTO 145
140 PRINT:IF A$="Y" THEN 145 ELSE 360
```

```
145 CLS
150 PRINT "I AM GOIING TO PICK A NUMBER BETWEEN 0000 - 5555."
160 PRINT "YOU ARE TO TRY TO GET THAT NUMBER IN THE MINIMAL"
170 PRINT "AMOUNT OF GUESSES.":PRINT
180 PRINT "EVERY TIME YOU GUESS A NUMBER I WILL GIVE YOU CLUES AS TO"
190 PRINT "HOW CLOSE YOU ARE TO THE NUMBER I GUESSED. THE CLUES WILL"
200 PRINT "BE  'BLACK'  AND/OR  'WHITE'."
205 PRINT "IF I SAY  'BLACK', THEN THAT MEANS THAT ONE OF THE DIGITS"
210 PRINT "IS INCORRECT BUT NOT IN THE RIGHT ORDER. IF I SAY"
220 PRINT "'WHITE'  THEN YOU HAVE A CORRECT DIGIT IN THE CORRECT ORDER.  IT"
230 PRINT "IS UP TO YOU TO LOGICALLY FIGURE WHAT NUMBERS ARE CORRECT."
235 PRINT:PRINT "HIT -ENTER- TO CONTINUE...";:INPUT W
237 CLS
240 PRINT:PRINT "FOR EXAMPLE:  THE NUMBER IS 5210":PRINT
250 PRINT "YOU GUESS:  2413":PRINT
260 PRINT "YOU WOULD GET A  'BLACK'  BECAUSE THE NUMBER"
265 PRINT "2 IS CORRECT BUT IN THE WRONG ORDER AND"
270 PRINT "A  'WHITE'  BECAUSE YOU GUESSED THE NUMBER 1 WHICH WAS"
280 PRINT "THE CORRECT NUMBER IN THE CORRECT ORDER."
290 PRINT:PRINT "HIT -ENTER- TO CONTINUE...";:INPUT W
295 CLS
300 PRINT "THERE ARE TWO VERSIONS TO THIS GAME. THE BEGINNERS VERSION"
310 PRINT "WILL NOT HAVE THE SAME DIGIT USED TWICE IN THE NUMBER. THE"
320 PRINT "EXPERTS ON THE OTHER HAND CAN HAVE AS MANY AS FOUR OF THE"
330 PRINT "DIGITS THE SAME.":PRINT
340 PRINT "ONE OF TEN PEOPLE CAN PLAY. TRY TO SEE WHO CAN DO THE BEST."
350 PRINT:PRINT "********** GOOD LUCK **********"
360 PRINT:PRINT "ARE YOU AN EXPERT (TYPE E) OR A BEGINNER (TYPE B)";
370 INPUT A9$:PRINT:PRINT
380 PRINT:PRINT "HOW MANY WISH TO PLAY";:INPUT Q
390 IF Q)10 THEN 380 ELSE IF Q(1 THEN 380
400 FOR P=1 TO Q
410 PRINT:PRINT
420 PRINT "ATTENTION PERSON"P", I AM PICKING A NUMBER.":PRINT
430 FOR I=1 TO 6:C(I)=0:NEXT I
440 N=0:FOR I=1 TO 4
450 N1=INT(5*RND(0))+1:IF A9$="E" THEN 470
460 IF C(N1+1)=1 THEN 450 ELSE C(N1+1)=1
470 N=N+(N1*(10^(I-1))):NEXT I
480 N1=N:T5=0
490 T1=INT(N/1000):N=N-T1*1000
500 H1=INT(N/100):N=N-H1*100
510 E1=INT(N/10):N=N-E1*10
515 N=INT(N):N1=INT(N1)
520 Z(1,1)=T1:Z(1,2)=H1:Z(1,3)=E1:Z(1,4)=N
530 PRINT:IF T5=25 THEN PRINT ELSE 550
540 PRINT "TOO MANY TRIES, THE NUMBER IS "N1:GOTO 720
550 PRINT "WHAT IS YOUR GUESS";:INPUT G
560 T5=T5+1:G1=G
570 FOR I=1 TO 4:S(I)=0:K(I)=0:NEXT I:X1=0
580 T=INT(G/1000):G=G-T*1000
590 H=INT(G/100):G=G-H*100
600 E=INT(G/10):G=G-E*10
610 Z(2,1)=T:Z(2,2)=H:Z(2,3)=E:Z(2,4)=G
620 IF G1=N1 THEN 710
630 X=INT(4*RND(0))+1:IF S(X)=1 THEN 630 ELSE S(X)=1
640 FOR L=1 TO 4:IF Z(2,X)=Z(1,L) THEN 650 ELSE 700
650 IF K(L)=1 THEN 700
660 IFX=L THEN 670 ELSE 680
670 PRINT "WHITE ";:GOTO 690
680 PRINT "BLACK ";
690 REM
700 NEXT L:X1=X1+1:IF X1=4 THEN 530 ELSE 630
710 PRINT:PRINT "VERY GOOD, YOU GOT THE NUMBER IN"T5"GUESSES."
720 PRINT:PRINT:T(P)=T(P)+T5:NEXT P:R=R+1
730 PRINT:PRINT "AT THE END OF ROUND"R:PRINT
```

```
740 PRINT "PERSON","TOTAL","AVERAGE","CATEGORY"
750 PRINT:FOR I=1 TO Q
760 PRINT I,T(I),:T9=INT((T(I)/R)*100)/100:PRINT T9,
770 GOSUB 830
780 NEXT I
790 PRINT:PRINT:PRINT
800 PRINT "ANOTHER ROUND";:INPUT M$
805 IF M$="YES" THEN 400
810 PRINT:PRINT:IF M$="Y" THEN 400
820 PRINT:GOTO 910
830 REM
840 IF T5<5 THEN PRINT "EXPERT":RETURN
850 IF T5<9 THEN PRINT "EXCELLENT":RETURN
860 IF T5<13 THEN PRINT "GOOD":RETURN
870 IF T5<16 THEN PRINT "FAIR":RETURN
880 IF T5<21 THEN PRINT "POOR":RETURN
890 IF T5<25 THEN PRINT "BAD":RETURN
900 PRINT "KEEP PRACTICING":RETURN
910 END
```

BULLET

Russian roulette

Description

In this game of chance up to 5 persons can be involved. Each person takes a turn as a revolver chamber clicks off. If a bullet goes off with a Bang!!, the unlucky person is eliminated. The game ends when only 1 person is left!

Variable list

A( ) = If this flag is 1, then that person has been previously shot
D = Number of people shot
E = Round number
I = Person's number being processed
Y = Probability of not being shot
Z = Probability of being shot (based upon how many people have previously pulled the trigger in the current round)

Sample run

```
THIS IS A RUSSIAN ROULETTE GAME.

GAME WILL END WHEN ONLY ONE PERSON IS LEFT!

GOOD LUCK!!!!  (YOU'LL NEED IT!)
```

```
HOW MANY WISH TO PLAY?3

NUMBER YOURSELVES FROM 1 TO 3 .



ROUND 1         GAME 1

PERSON 1        CLICK
PERSON 2        CLICK
PERSON 3        CLICK

ROUND 2         GAME 1

PERSON 1        BANG!!!

PERSON 1 YOU ARE DEAD!

THE REST OF YOU WILL CONTINUE!


ROUND 1         GAME 2

PERSON 2        CLICK
PERSON 3        CLICK

ROUND 2         GAME 2

PERSON 2        CLICK
PERSON 3        CLICK

ROUND 3         GAME 2

PERSON 2        BANG!!!

PERSON 2 YOU ARE DEAD!

PERSON 3 YOU HAVE WON AND MAY WALK AWAY
ALIVE AND FREE ! ! !


READY.
```

Program listing

BULLET

```
90 CLS
100 PRINT:PRINT
110 DIM A(100)
120 PRINT "THIS IS A RUSSIAN ROULETTE GAME.":PRINT
130 PRINT
140 PRINT "GAME WILL END WHEN ONLY ONE PERSON IS LEFT!"
150 PRINT:PRINT "GOOD LUCK!!!! (YOU'LL NEED IT!)"
160 PRINT:PRINT "HOW MANY WISH TO PLAY";:INPUT A
170 PRINT:PRINT "NUMBER YOURSELVES FROM 1 TO"A;".":PRINT:PRINT
```

```
175 INPUT "HIT ENTER WHEN READY...";M$
176 FOR F=1TO500:NEXT F
177 CLS
180 PRINT:G=1:D=0
190 E=1
195 CLS
200 PRINT:PRINT "ROUND"E,"GAME"G:PRINT
210 FOR I=1TO A
220 IF A(I)=1 THEN 290
230 PRINT "PERSON";I,
240 Z=A-D+1:IF Z)=6 THEN 250:Z=6
250 P=INT(Z*RND(X))+1
260 Y=(1/I)*RND(X):IF Y(1/6 THEN 270:Y=1/6
270 IF (1/P)+Y(=E/Z THEN 295
280 PRINT "CLICK"
285 FOR F=1TO 500:NEXT F
290 NEXT I:E=E+1:GOTO 195
295 FOR F=1TO500:NEXT F
300 PRINT "BANG!!!":PRINT:PRINT "PERSON"I"YOU ARE DEAD!":PRINT
310 A(I)=1
320 D=D+1:IF D)=A-1 THEN 340
330 PRINT "THE REST OF YOU WILL CONTINUE!":G=G+1:PRINT
335 FOR F=1TO1000: NEXT F
337 GOTO 190
340 FOR X=1 TO A:IF A(X)=0 THEN 350
345 NEXT X
350 PRINT "PERSON"X"YOU HAVE WON AND MAY WALK AWAY"
360 PRINT "ALIVE AND FREE ! ! !":PRINT:PRINT
365 STOP
370 END
```

COMPAT

biorhythmic compatibility of two people

Description

By using the biorhythmic cycle theory (see BIORHYTHM game), this program takes the birthdays of two individuals and calculates when they are compatible during their lifetime. It also gives the average compatibility percentage. For example, the computer adds the physical cycle compatibility (23-day) percentage, the sensitivity cycle compatibility (28-day) percentage, and finally the cognitive cycle compatibility (33-day) percentage in order to give a total percentage of the 3 biorhythmic compatibility cycles. Then, to obtain an average of this, the total is divided by 3.

Two individuals will have an average compatibility of 100% only if they were born on the same day or if they were born 21,252 days apart or 59.86 years. Couples, therefore, should not feel insulted if their average is not 100%.

Variable list

A( ) = Number of days past in year up to month
A1( ) = Name of person one
B1( ) = Name of person two
C3 = Remainder of P2/33 (cognitive)
D3 = Remainder of P2/23 (physical)
E1, F1, G1 = Person one's birthday (month, day, year)

E2, D2, G2 = Person two's birthday (month, day, year)

P2 = Difference of days between person one's birthday and person two's birthday

S3 = Remainder of P2/28 (sensitivity)

Sample run

```
WHAT IS THE NAME OF PERSON ONE? JOHN H. DOE
WHAT IS PERSON ONE'S BIRTHDAY?  (MM,DD,YYYY)?5,1,1954

WHAT IS THE NAME OF PERSON TWO? MARY D. DOE
WHAT IS PERSON TWO'S BIRTHDAY?  (MM,DD,YYYY)?12,21,1955



COMPATABILITY ANALYSIS
----------------------

COMPATABILITY ANALYSIS OF JOHN H. DOE AND MARY D. DOE.


JOHN H. DOE WAS BORN ON MAY 1 , 1954 .  IT WAS A SATURDAY.

MARY D. DOE WAS BORN ON DECEMBER 21 , 1955 .  IT WAS A WEDNESDAY.


PHYSICAL CYCLE COMPATABILITY (23-DAY) IS      100 %
SENSITIVITY CYCLE COMPATABILITY (28-DAY) IS   28.571 %
COGNITIVE CYCLE COMPATABILITY (33-DAY) IS     69.696 %
                                              --------
AVERAGE COMPATABILITY IS                      66.089 %


READY.
```

Program listing

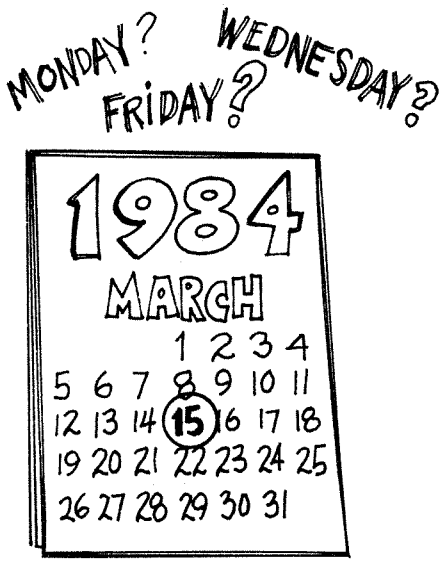
COMPAT

```
100 DIM A1(30),B1(30)
110 DIM A(12)
120 FOR I=1 TO 12:READ A(I):NEXT I
130 DATA 0,31,59,90,120,151,181,212,243,273,304,334
140 Y=0
150 Y=Y+1
155 CLS:PRINT "WHAT IS THE NAME OF PERSON ONE";:INPUT W$
190 PRINT:PRINT "WHAT IS PERSON ONE'S BIRTHDAY?  (MM,DD,YYYY)";
200 INPUT M,D,Y
210 E1=M:F1=D:G1=Y
220 GOSUB 770
230 Z2=T:K1=J+1
240 PRINT
250 PRINT "WHAT IS THE NAME OF PERSON TWO";:INPUT X$
310 PRINT:PRINT "WHAT IS PERSON TWO'S BIRTHDAY?  (MM,DD,YYYY)";
320 INPUT M,D,Y
330 E2=M:D2=D:G2=Y
340 GOSUB 770
350 P2=ABS(Z2-T)
360 K2=J+1
380 FOR I=1 TO 6:PRINT:NEXT I
385 CLS
390 PRINT "COMPATABILITY ANALYSIS"
400 PRINT "----------------------"
410 PRINT
420 PRINT "COMPATABILITY ANALYSIS OF ";W$;" AND ";X$;"."
450 PRINT
470 PRINT W$;" WAS BORN ON ";:M=E1:GOSUB 950
480 PRINT F1;",";G1;". IT WAS A ";:J=K1
490 GOSUB 1080
500 PRINT "."
510 PRINT
530 PRINT X$;" WAS BORN ON ";:M=E2:GOSUB 950
540 PRINT D2;",";G2;". IT WAS A ";:J=K2
550 GOSUB 1080
560 PRINT "."
570 PRINT
580 Z=P2
590 P3=ABS(INT(((Z/23)-INT(Z/23))*23))
600 S3=ABS(INT(((Z/28)-INT(Z/28))*28))
610 C3=ABS(INT(((Z/33)-INT(Z/33))*33))
620 P5=ABS(100-((2*P3)*(100/23)))
630 S5=ABS(100-((2*S3)*(100/28)))
640 C5=ABS(100-((2*C3)*(100/33)))
650 PRINT "PHYSICAL CYCLE COMPATABILITY (23-DAY) IS        ";
660 PRINT INT(P5*1000)/1000;"%"
670 PRINT "SENSITIVITY CYCLE COMPATABILITY (28-DAY) IS     ";
680 PRINT INT(S5*1000)/1000;"%"
690 PRINT "COGNITIVE CYCLE COMPATABILITY (33-DAY) IS       ";
700 PRINT INT(C5*1000)/1000;"%"
710 PRINT ,,,"----------"
720 PRINT "AVERAGE COMPATABILITY IS",," ";
730 A5=(P5+S5+C5)/3
740 PRINT INT(A5*1000)/1000;"%"
760 GOTO 760
770 Y1=Y-1800
780 Q1=INT(Y1/4)
790 Q2=INT(Q1/25)
800 Q3=INT((Y1+200)/400)
810 K=0
820 IF Q1*4<>Y1 THEN 860
830 IF Q2*100<>Y1 THEN 860
840 IF Q3*400-200<>Y1 THEN 860
```

```
850 K=1
860 T=365*Y1+Q1-Q2+Q3-K
870 T=T+A(M)+D-1
880 IF M<3 THEN 900
890 T=T+K
900 IF INT(Y1/4)<>Y1/4 THEN 930
910 IF M>2 THEN 930
920 T=T-1
930 J=T-7*INT(T/7)
940 RETURN
950 IF M=1 THEN PRINT "JANUARY";:RETURN
960 IF M=2 THEN PRINT "FEBRUARY";:RETURN
970 IF M=3 THEN PRINT "MARCH";:RETURN
980 IF M=4 THEN PRINT "APRIL";:RETURN
990 IF M=5 THEN PRINT "MAY";:RETURN
1000 IF M=6 THEN PRINT "JUNE";:RETURN
1010 IF M=7 THEN PRINT "JULY";:RETURN
1020 IF M=8 THEN PRINT "AUGUST";:RETURN
1030 IF M=9 THEN PRINT "SEPTEMBER";:RETURN
1040 IF M=10 THEN PRINT "OCTOBER";:RETURN
1050 IF M=11 THEN PRINT "NOVEMBER";:RETURN
1060 PRINT "DECEMBER";:RETURN
1070 IF J=1 THEN PRINT "WEDNESDAY";:RETURN
1080 IF J=2 THEN PRINT "THURSDAY";:RETURN
1090 IF J=3 THEN PRINT "FRIDAY";:RETURN
1100 IF J=4 THEN PRINT "SATURDAY";:RETURN
1110 IF J=5 THEN PRINT "SUNDAY";:RETURN
1120 IF J=6 THEN PRINT "MONDAY";:RETURN
1130 PRINT "TUESDAY";:RETURN
1140 END
```

DATE

calendar
date
calculation



Description

Enter today's date and another date. The computer will automatically tell you the day of the week that date fell on and the days apart from the day you are running it.

Variable list

D( ) = Days in each month
J = Day number of date picked
N( ) = Cumulative days past till current month
T = Number of days difference between entered date and January 1, 1800
V = Difference of days between entered date and today's date
Y1 = Current year minus year 1800
Z = Number of days difference between today's date and January 1, 1800

Sample run

```
DAY PREDICTION PROGRAM!

ENTER A DATE AND THE COMPUTER WILL TELL YOU
WHAT DAY IT WAS.  ENTER A 0,0,0 TO STOP.
```

```
ENTER TODAY'S DATE?   (MM,DD,YYYY)?2,29,1978
PROGRAM CANNOT ACCEPT GIVEN DATE. RE-ENTER
ENTER TODAY'S DATE?   (MM,DD,YYYY)?2,1,1978

ENTER DATE?  (MM,DD,YYYY)?2,1,1978


FEBRUARY 1 , 1978 IS TODAY, WHICH IS A WEDNESDAY.









ENTER DATE?  (MM,DD,YYYY)?12,5,1955


DECEMBER 5 , 1955 OCCURRED 8094 DAYS AGO, ( 22.16 YEARS)
AND WAS A MONDAY.









ENTER DATE?  (MM,DD,YYYY)?0,0,0


READY.
```

Program listing

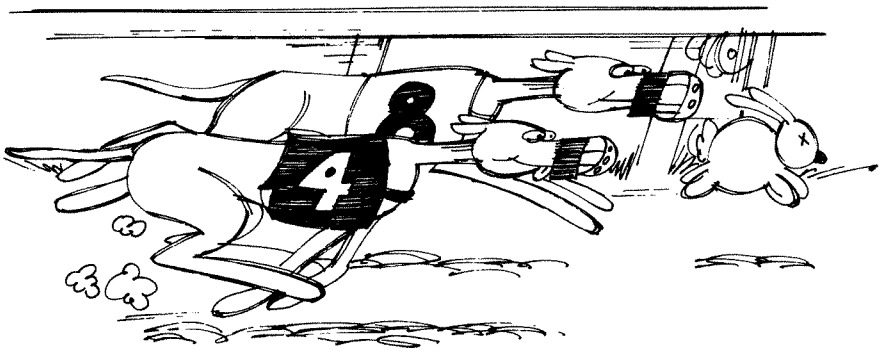
```
DATE    BASIC-69


100 DIM N(12),D(12)
110 CLS:PRINT "DAY PREDICTION PROGRAM!":PRINT
120 PRINT "ENTER A DATE AND THE COMPUTER WILL TELL YOU"
130 PRINT "WHAT DAY IT WAS. ENTER A 0,0,0 TO STOP.":PRINT
140 PRINT:PRINT:PRINT
150 FOR I=1 TO 12
160 READ N(I)
170 READ D(I)
180 NEXT I
190 DATA 0,31,31,28,59,31,90,30,120,31,151,30,181
200 DATA 31,212,31,243,30,273,31,304,30,334,31
```

```
210 DATA 0,31,59,90,120,151,181,212,243,273,304,334
220 PRINT "ENTER TODAY'S DATE  (MM,DD,YYYY)";
230 INPUT M,D,Y
240 W=0
250 GOSUB 680
260 Z=T
270 PRINT
280 PRINT "ENTER DATE  (MM,DD,YYYY)";
290 INPUT M,D,Y
300 IF M<>0 THEN 320 ELSE IF D<>0 THEN 320 ELSE IF Y<>0 THEN 320
310 STOP
320 W=1
330 GOSUB 680
340 V=T-Z
350 PRINT:PRINT
370 GOSUB 940:PRINT D;",";Y;
380 Q=V/365.2425
390 Q=INT(ABS(Q)*100+.5)/100
400 IF V<0 THEN 460
410 IF V=0 THEN 520
420 PRINT "WILL OCCUR";V;"DAYS FROM TODAY, (";
430 PRINT Q;" YEARS)"
440 PRINT "AND WILL BE";
450 GOTO 490
460 PRINT "OCCURRED";-V;"DAYS AGO, (";
470 PRINT Q;"YEARS)"
480 PRINT "AND WAS";
490 PRINT " A ";:GOSUB 1060
500 PRINT
510 GOTO 900
520 PRINT "IS TODAY, WHICH IS";
530 GOTO 490
540 Y1=Y-1800
550 Q1=INT(Y1/4)
560 Q2=INT(Q1/25)
570 Q3=INT((Y1+200)/400)
580 K=0
590 IF Q1*4<>Y1 THEN 630
600 IF Q2*100<>Y1 THEN 620
610 IF Q3*400-200<>Y1 THEN 630
620 K=1
630 T=365*Y1+Q1-Q2+Q3-K
640 T=T+N(M)+D-1
650 IF M<3 THEN 800
660 T=T+K
670 GOTO 800
680 GOSUB 820
690 IF E=1 THEN 770
700 IF D<0 THEN 770
710 IF D>31 THEN 770
720 IF Y>100 THEN 740
730 Y=Y+1900
740 IF Y<1800 THEN 770
750 IF Y>4999 THEN 770
760 GOTO 540
770 PRINT:PRINT "PROGRAM CANNOT ACCEPT GIVEN DATE. RE-ENTER..."
780 IF W=0 THEN 220
790 GOTO 270
800 J=T-7*INT(T/7)
810 RETURN
820 E=1
830 IF M<1 THEN 890
840 IF M>12 THEN 890
850 K=0:IF Y/4<>INT(Y/4) THEN 870
860 K=1
870 IF D>D(M)+K THEN 890
```

```
880 E=0
890 RETURN
900 PRINT
930 GOTO 270
940 IF M=1 THEN PRINT "JANUARY";:RETURN
950 IF M=2 THEN PRINT "FEBRUARY";:RETURN
960 IF M=3 THEN PRINT "MARCH";:RETURN
970 IF M=4 THEN PRINT "APRIL";:RETURN
980 IF M=5 THEN PRINT "MAY";:RETURN
990 IF M=6 THEN PRINT "JUNE";:RETURN
1000 IF M=7 THEN PRINT "JULY";:RETURN
1010 IF M=8 THEN PRINT "AUGUST";:RETURN
1020 IF M=9 THEN PRINT "SEPTEMBER";:RETURN
1030 IF M=10 THEN PRINT "OCTOBER";:RETURN
1040 IF M=11 THEN PRINT "NOVEMBER";:RETURN
1050 PRINT "DECEMBER";:RETURN
1060 IF J=0 THEN PRINT "WEDNESDAY.";:RETURN
1070 IF J=1 THEN PRINT "THURSDAY.";:RETURN
1080 IF J=2 THEN PRINT "FRIDAY.";:RETURN
1090 IF J=3 THEN PRINT "SATURDAY.";:RETURN
1100 IF J=4 THEN PRINT "SUNDAY.";:RETURN
1110 IF J=5 THEN PRINT "MONDAY.";:RETURN
1120 PRINT "TUESDAY.";:RETURN
1130 END
```

DOGS

dog race game



Description

This program simulates a dog race game. The prior racing experience of each dog (won/loss record) helps to determine the outcome of the race. From start to finish the dogs move up a little bit each as the game progresses. All odds are calculated based on the amount of dollars bet on each dog. It is interesting to note that if you went to the track, the same odds would show up given the amounts bet on each dog. Good luck!

Description of bets

Win—Dog comes in first.
Place—Dog comes in first or second.
Show—Dog comes in first, second, or third.
Perfecta—Pick the dog to come in first and a dog to come in second. If they finish in the order you picked them, you win.

Note

At normal parimutuel dog tracks, the track takes out 17% of the pool (total bets placed by the participants) for state taxes and track expenses. In the parimutuel betting system, those backing winners divide, in proportion to their wagers, the total amount bet, minus the percentage for the track and taxes. The only time the track would lose money would be if the betting participants continuously placed heavy bets on the favorite and the favorite kept on winning. The computer game DOGS also takes out 17% when it calculates the odds for each race.

Variable list

A1 = Maximum wins for each dog in current race
A2 = Maximum wins picked for each dog

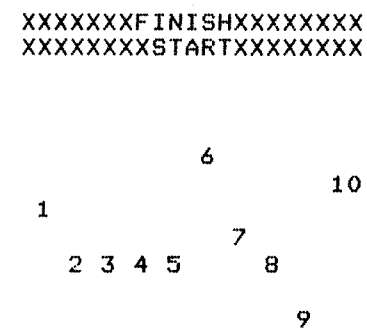
A1( ) = Amount of money bet on each dog (for odds)
B1 = Total amount bet in pool
B2 = Maximum losses for each dog in current race
B3 = Maximum losses picked for each dog
B1( ) = Odds for each dog
B9( ) = Amount of money for each player
C8 = Maximum lengths for each race
C9 = Length to travel in race
C( ) = Maximum number of lengths each dog can travel
C1( ) = Total lengths traveled by each dog in race
C2( ) = Win, place, or show for dog picked by each player
C9( ) = First dog in perfecta for each player
D1 = Total amount bet in perfecta pool
D9( ) = Second dog in perfecta for each player
E9( ) = Perfecta bet for each player
F9 = Accuracy of decimal in percentage
J = Winning amount
N( ) = Dog number picked by each player
P9 = Amount winning a perfecta
S1( ) = Bet by each player
W( ) = W(1) is winning dog
W(2) is placed dog
W(3) is show dog

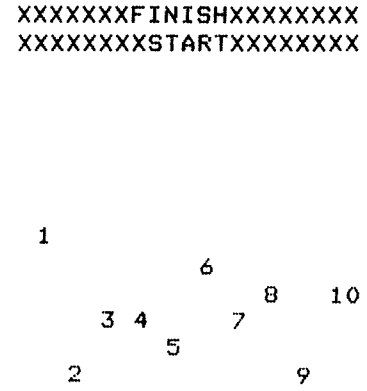
Sample run

```
                WELCOME TO ROOK-A-DAY RACE TRACK!!

RACE 1                          18 LENGTHS


DOG             WINS            LOSSES          PERCENTAGE
 1               2               1               .666
 2               4               1               .8
 3               3               1               .75
 4               5               1               .833
 5               9               1               .9
 6               7               1               .875
 7               8               1               .888
 8               9               1               .9
 9               2               1               .666
 10              3               1               .75

THIS IS A DOG RACE GAME.

PLEASE PLACE YOUR BETS.
```

```
ENTER A ONE FOR WIN,
A TWO FOR PLACE,
OR A THREE FOR SHOW.


HOW MANY WISH TO BET?2
PERSON  1  ENTER YOUR DOG?7
WIN, PLACE, OR SHOW?1
YOUR BET?50
HERE ARE YOUR 25 TICKETS.
FIRST, SECOND DOG IN PERFECTA?7,8
AND THE BET?20

PERSON  2  ENTER YOUR DOG?8
WIN, PLACE, OR SHOW?1
YOUR BET?100
HERE ARE YOUR 50 TICKETS.
FIRST, SECOND DOG IN PERFECTA?8,7
AND THE BET?100


ALL BETS ARE CLOSED.

ODDS BASED ON BETS.

DOG              ODDS
 1              25 : 1
 2              35 : 1
 3              22 : 1
 4              30 : 1
 5              15 : 1
 6              35 : 1
 7              7 : 1
 8              3 : 1
 9              8 : 1
 10             13 : 1


  1 2 3 4 5 6 7 8 9 10      AND THEY'RE OFF!!!
 XXXXXXXXSTARTXXXXXXXX
  1          6 7 8   10
        4 5       9
      3
    2
```

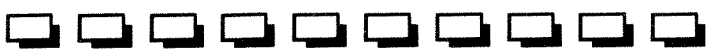
```
 XXXXXXXFINISHXXXXXXXX
 XXXXXXXXSTARTXXXXXXXX

  1         6
        4           10
              7 8
          5
                  9
    2 3
```





XXXXXXXFINISHXXXXXXXX

```
 XXXXXXXXSTARTXXXXXXXX




  1

        4

              6 7      10
      3    5      8


 XXXXXXXFINISHXXXXXXXX
 XXXXXXXXSTARTXXXXXXXX









  1      4

               7 8
             6        10
 XXXXXXXFINISHXXXXXXXX
 ********************
PAYOFFS BASED ON ONE TICKET.

DOG             WIN             PLACE           SHOW
 9               18              13.5            9
 2                               54              36
 3                                               23


PERFECTA  9 , 2  PAYS $ 182



ANOTHER RACE?? (1 FOR YES)?0


PERSON          AMOUNT
 1              -70
 2              -200
COMP             270

READY.
```

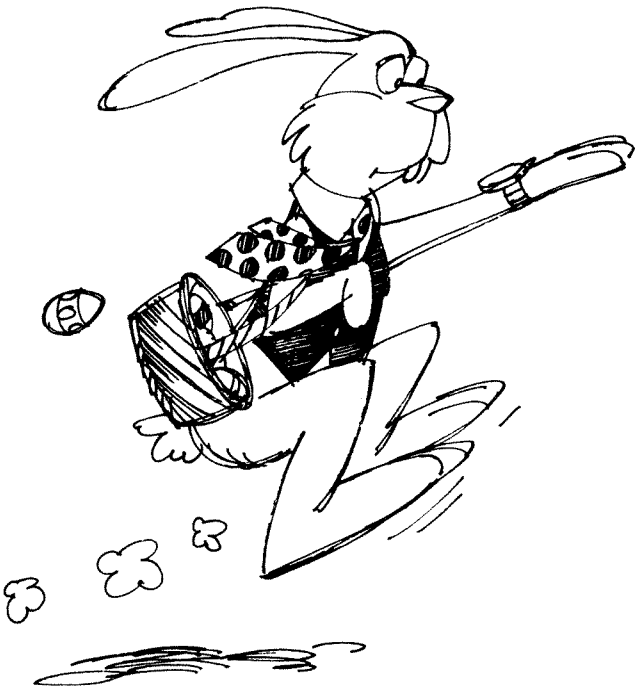


```
100 DIM B1(10),C(10)
110 DIM N(12),S1(12),B9(12),C9(12),D9(12),E9(12)
120 DIM C1(10),C2(12),A1(10),W(3)
130 C8=25
140 A2=7:B3=4
150 F9=1000:CLS
160 PRINT TAB(15);"WELCOME TO ROOK-A-DAY RACE TRACK!!"
170 REM
180 A1=INT(A2*RND(X))+3:B2=INT(B3*RND(X))+1
190 C9=13
200 M9=M9+1
210 PRINT "RACE";M9,,C9;"LENGTHS"
220 PRINT:PRINT "DOG","WINS","LOSSES","PERCENTAGE"
230 FOR I=1 TO 10
240 A9=INT(A1*RND(X))+1:B9=INT(B2*RND(X))+1
250 C(I)=INT((A9/(A9+B9)*F9)-.5)/100:IF C(I)(C9/5 THEN 260 ELSE C(I)=C9/5
260 PRINT I,A9,B9,INT((A9/(A9+B9))*F9)/F9
270 NEXT I:PRINT:PRINT "HIT -ENTER- TO CONTINUE...";:INPUT Z
280 IF U9=1 THEN 400
290 CLS
300 PRINT "THIS IS A DOG RACE GAME.":PRINT
310 PRINT "PLEASE PLACE YOUR BETS.":PRINT
320 PRINT:PRINT "ENTER A ONE FOR WIN,"
330 PRINT "A TWO FOR PLACE,"
340 PRINT "OR A THREE FOR SHOW."
350 PRINT
360 PRINT:PRINT "HOW MANY WISH TO BET";:INPUT Q
370 IF Q(=13 THEN 390
380 PRINT "NO MORE THAN 13.":GOTO 360
390 U9=1
400 FOR I=1 TO Q
410 PRINT "PERSON ";I;" ENTER YOUR DOG";:INPUT N(I)
420 PRINT "WIN (TYPE W), PLACE (TYPE P), OR SHOW (TYPE S)";:INPUT K$
425 IF K$="W" THEN C2(I)=1 ELSE IF K$="P" THEN C2(I)=2 ELSE IF K$="S" THEN C2(I)
=3
430 PRINT "YOUR BET";:INPUT S1(I)
440 PRINT "HERE ARE YOUR";S1(I)/2;"TICKETS."
450 PRINT "FIRST, SECOND, DOG IN PERFECTA";:INPUT C9(I),D9(I)
460 PRINT "AND THE BET";:INPUT E9(I)
470 PRINT:NEXT I
480 D1=100:B1=200
490 FOR I=1 TO Q:FOR I1=1 TO 10:IF N(I)()I1 THEN 510
500 A1(I1)=A1(I1)+S1(I)*C2(I)
510 NEXT I1:NEXT I
520 FOR I=1 TO Q:B1=B1+S1(I):D1=D1+E9(I):NEXT I
530 FOR I=1 TO 10:IF A1(I))0 THEN 560
540 B1(I)=INT((B1/10)*RND(X))+1
550 GOTO 570
560 B1(I)=INT((B1-A1(I))/(A1(I)-(.17*A1(I))))
570 IF B1(I))=2 THEN 580:B1(I)=2
580 NEXT I
590 PRINT:PRINT "ALL BETS ARE CLOSED."
600 FOR Z1=1 TO 400:NEXT Z1:CLS
610 PRINT "ODDS BASED ON BETS."
620 PRINT:PRINT "DOG","  ODDS"
630 FOR I=1 TO 10
640 PRINT I,B1(I)":"1
650 NEXT I
660 PRINT:PRINT "HIT -ENTER- TO START GAME...";:INPUT Z:CLS
670 PRINT TAB(2);" 1 2 3 4 5 6 7 8 9 10","AND THEY'RE OFF!!!"
690 FOR R=1 TO 10
700 W=0
710 C1(R)=(C(R)*RND(X)+1)+C1(R)
720 NEXT R
730 PRINT "  XXXXXXX START XXXXXXX"
740 FOR P=1 TO C9
```

```
750 FOR R=1 TO 10
760 IF INT(C1(R))()P THEN 790
770 PRINT TAB(R*2);R;
790 NEXT R:PRINT:NEXT P
800 PRINT "  XXXXXX FINISH XXXXXXX"
810 FOR P=1 TO 10:IF C1(P)(=C9 THEN 820 ELSE W=W+1
820 NEXT P
825 FOR Z1=1 TO 500:NEXT Z1
830 IF W(3 THEN CLS:GOTO 690
840 PRINT "  **********************"
850 FOR R=1 TO 3:H=-1
860 FOR P=1 TO 10
870 IF C1(P))H THEN 890
880 NEXT P:C1(J)=-2:W(R)=J:NEXT R:GOTO 900
890 J=P:H=C1(P):GOTO 880
900 PRINT:PRINT "PAYOFFS BASED ON ONE TICKET."
910 PRINT
920 PRINT "DOG","WIN","PLACE","SHOW"
930 FOR I=1 TO 10:B1(I)=B1(I)*2+2:NEXT I
940 PRINT W(1),B1(W(1)),B1(W(1))-(B1(W(1))/4),B1(W(1))-(B1(W(1))/2)
950 PRINT W(2),"   ",B1(W(2))-(B1(W(2))/4),B1(W(2))-(B1(W(2))/2)
960 PRINT W(3),"   ","   ",B1(W(3))-(B1(W(3))/2)
970 PRINT:PRINT
980 PRINT:PRINT "PERFECTA ";W(1);",";W(2);" PAYS $";
990 D6=0
1000 FOR I=1 TO Q
1010 IF C9(I)()W(1) THEN 1040
1020 IF D9(I)()W(2) THEN 1040
1030 D6=D6+1
1040 NEXT I:IF D6()0 THEN 1050 ELSE D6=1
1050 P9=INT((D1*.83)/D6)
1060 PRINT P9
1070 PRINT:PRINT
1080 FOR I=1 TO Q:FOR I1=1 TO 3
1090 IF N(I)()W(I1) THEN 1100 ELSE IF C2(I))=I1 THEN 1200
1100 NEXT I1
1110 B9(I)=B9(I)-S1(I):NEXT I
1120 PRINT
1130 FOR I=1 TO Q:IF C9(I)()W(1) THEN 1170
1140 IF D9(I)()W(2) THEN 1170
1150 PRINT "MR."I"HAS WON THE PERFECTA.  HE WINS $";
1160 PRINT P9-E9(I):B9(I)=B9(I)+P9-E9(I)
1170 B9(I)=B9(I)-E9(I):GOTO 1180
1180 NEXT I
1190 GOTO 1270
1200 PRINT "CONGRATULATIONS MR. "I"YOU'VE WON $";
1210 IF C2(I)=1 THEN 1220 ELSE IF C2(I)=2 THEN 1230 ELSE K9=2:GOTO 1240
1220 J=(S1(I)/2)*B1(W(I1)):GOTO 1250
1230 K9=4
1240 J=(S1(I)/2)*(B1(W(I1))-(B1(W(I1))/K9))
1250 PRINT J-S1(I)
1260 S1(I)=-(J-S1(I)):GOTO 1110
1270 FOR I=1 TO 10:A1(I)=0:C1(I)=0:NEXT I
1280 W(1)=0:W(2)=0:W(3)=0:B1=0:D1=0
1300 PRINT "ANOTHER RACE";:INPUT J8$
1310 IF J8$="YES" THEN 170 ELSE IF J8$="Y" THEN 170
1315 CLS
1320 PRINT:PRINT:PRINT "PERSON","AMOUNT"
1330 FOR I=1 TO Q
1340 PRINT I,B9(I)
1350 G9=G9-B9(I)
1360 NEXT I
1370 PRINT "COMP",G9
1375 PRINT
1380 END
```

EASTER

Easter date calculation



Description

This program, when given any year, will find the date on which Easter will fall. Pass this one on to the Easter Bunny so he'll never be late!

Variable list

The variables used in this program are just the elements of a function used to determine the day Easter falls on.

J = Year that was entered
F = Day on which Easter falls

Sample run

```
THIS PROGRAM WHEN GIVEN A YEAR, WILL FIND
THE DATE ON WHICH EASTER WILL FALL.

INPUT THE YEAR?70


EASTER FALLS ON MARCH 29 , 1970


ANOTHER DATE?  (1=YES)?1
```

```
INPUT THE YEAR?1975

EASTER FALLS ON MARCH 30 , 1975

ANOTHER DATE?  (1=YES)?1
INPUT THE YEAR?1980

EASTER FALLS ON APRIL 6 , 1980

ANOTHER DATE?  (1=YES)?0
```

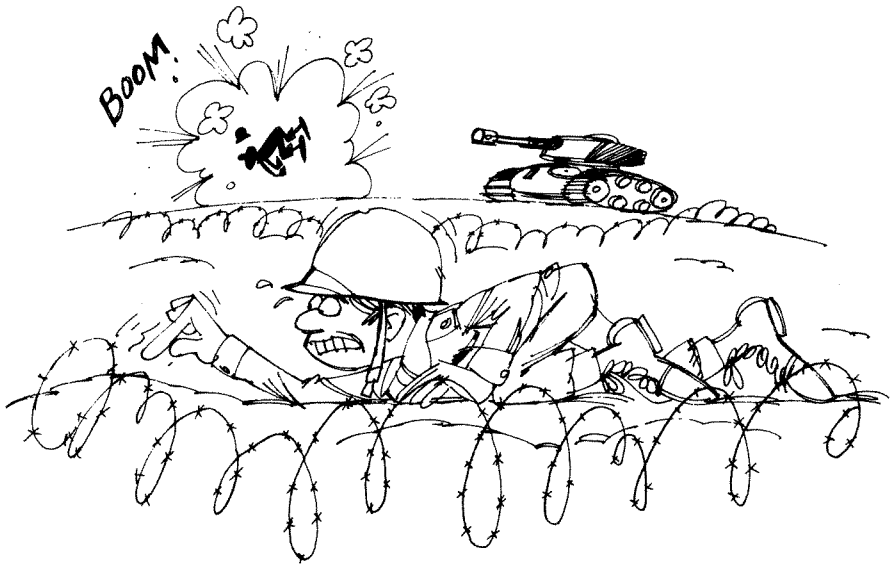
Program listing

EASTER BASIC-69

```
100 PRINT
110 PRINT "THIS PROGRAM,WHEN GIVEN A YEAR, WILL FIND"
120 PRINT "THE DATE ON WHICH EASTER WILL FALL."
130 PRINT:PRINT "INPUT THE YEAR";
140 INPUT J
150 IF J)99 THEN 170
160 J=J+1900
170 PRINT:PRINT:PRINT
180 A=J-INT(J/19)*19
190 B=J-INT(J/4)*4
200 C=J-INT(J/7)*7
210 T=19*A+24
220 D=T-INT(T/30)*30
230 T=2*B+4*C+6*D+5
240 E=T-INT(T/7)*7
250 F=D+E-9
260 IF F<0 THEN 290
270 IF F)0 THEN 320
280  GOTO 180
290 F=F+31
300 PRINT "EASTER FALLS ON MARCH"F","J
310 GOTO 410
320 IF F=26 THEN 370
330 IF F<>25 THEN 350
340 IF D=28 THEN 390
350 PRINT "EASTER FALLS ON APRIL"F","J
360 GOTO 410
370 PRINT "EASTER FALLS ON APRIL 19, "J
380 GOTO 410
390 PRINT "EASTER FALLS ON APRIL 18, "J
400 GOTO 410
410 PRINT:PRINT:PRINT
420 PRINT "ANOTHER DATE? (1=YES)";
430 INPUT A
440 IF A=1 THEN 130
450 END
```

ESCAPE

a game of strategy



Description

The computer game positions you, the player, against 5 enemy attackers. The object of the game is to destroy your attackers before you are destroyed.

The attackers can be destroyed if they hit a mine or a tank. The tank is a sixth attacker. It works both for you and the enemy attacker. The tank destroys everything it touches. It can eliminate mines, the attackers, and *you*! The tank should be used to your advantage and maneuvered into your attackers. Be careful: If it touches you, you lose the battle.

You, as the player, are given 10 directions to move in the mined area. Moves 1 through 8 lead you in the directions displayed in the sample run. A move of "0" leaves you where you are in the area, and a move of 9 puts you randomly anywhere in the mined field, even on a mine. A move of 9 should only be used when you feel an absolute hit on an attacker is imminent. Remember, you can only use move 9 twice and you can be destroyed by hitting any mine (X) in the field, as well as in the perimeter.

Note

If 2 attackers move into each other, they are put somewhere else randomly in the mine field. Also, once a mine is destroyed it cannot appear again.

Variable list

A8 = Vertical board size
A9 = Horizontal board size
A( ) = Position of board layout
- A( ) = 5 represents the mines
- A( ) = 10 represents player
- A( ) = 15 represents the attackers
- A( ) = 20 represents nothing in that spot (spaces)
- A( ) = 25 represents the tank

B( ) = Represents coordinates of the attacks
- B(,1) = coordinates of tank
- B(,2-5) = coordinates of attacks

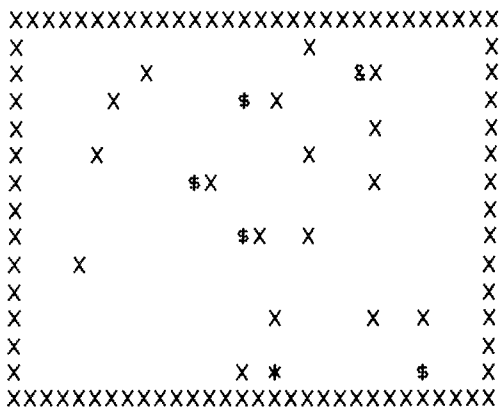
H = Random vertical position
I = Random horizontal position
J = Current vertical position of player
K = Current horizontal position of player
M = Horizontal position of an object
N2 = Number of times option nine may be used by player
N3 = Number of attacks destroyed
V = Vertical position of an object
W = Horizontal position of an object
X = New vertical position of attacker
Y = Move option of player

Sample run

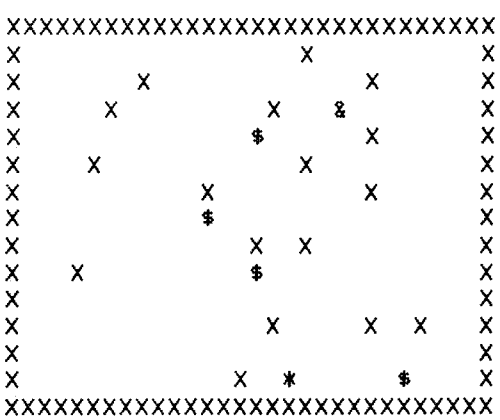
```
YOU ARE THE ('*').  THE ATTACKERS ARE THE ('$').
THE MINES ARE ('X').  THE TANK IS ('&').

MOVES ARE:     4,3,2
               5,*,1
               6,7,8

A MOVE OF '9' WILL PUT YOU ANYWHERE.  (2 CHANCES).

XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                    X        X
X        X  $X           X    &X
X     X           X           X
X       $           $    X    X
X    X  *           X        X
X            X           X    X
X                        X    X
X               X  X     X    X
X   X                    X    X
X                        X    X
X   $            X      X  X  X
X                        X    X
X              X$        X    X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

```
YOUR MOVE?8

XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                    X           X
X        X   X           X       X
X      X   $       X           & X
X                       X        X
X     X  $          $ X          X
X         *  X           X       X
X                                 X
X                 X  X            X
X   X                             X
X    $                            X
X                   X       X  X  X
X                $                X
X                X                X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX

YOUR MOVE?8

XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                    X           X
X        X   X           X       X
X      X             X           X
X           $              X   &  X
X     X                 X         X
X         $  X  $        X       X
X          *                      X
X                 X  X            X
X   X $                           X
X                                 X
X              $  X       X  X    X
X                                 X
X               X                 X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX

YOUR MOVE?9

XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                    X           X
X        X   X  *        X       X
X      X     $     X          &   X
X                       X         X
X     X     $     $  X            X
X             X           X       X
X                                 X
X       $         X  X            X
X   X                             X
X               $                 X
X                 X       X  X    X
X                                 X
X               X                 X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX

YOUR MOVE?4

***** ZAP ! !  ---  YOU KILLED ONE.
```

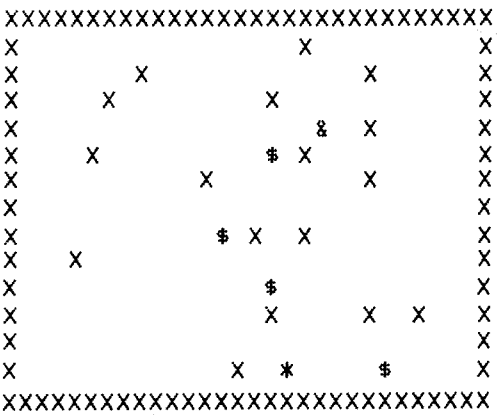
```
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X              *   X            X
X        X                X &    X
X      X           X              X
X             $   $         X     X
X     X                X         X
X              X           X      X
X         $                       X
X                  X   X          X
X    X             $              X
X                                 X
X                    X      X   X  X
X                                 X
X                 X               X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX

YOUR MOVE?7


XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                      X          X
X        X      *          X&     X
X      X      $ $ X              X
X                          X      X
X     X                X         X
X          $   X           X     X
X                                 X
X                $X   X           X
X    X                            X
X                                 X
X                  X      X   X   X
X                                 X
X                 X               X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX

YOUR MOVE?4

TWO ATTACKERS HAVE COLLIDED.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X              *     X    &       X
X        X     $           X       X
X      X             X             X
X                          X       X
X     X     $          X           X
X              X             X     X
X              $                   X
X                X   X             X
X    X                            X
X                                 X
X                  X      X   X   X
X                                $  X
X                 X               X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX

YOUR MOVE?9
```



```
YOUR MOVE?1
```



```
YOUR MOVE?0
```



```
YOUR MOVE?3
```

```
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                     X       X
X        X                X    X
X      X           X          X
X                        X    X
X     X                  &    X
X              X      $     X  X
X                             X
X                  X  X       X
X    X           $            X
X                             X
X                  X$     X  X X
X                   *     $    X
X                X            X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX

YOUR MOVE?8


XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                     X       X
X        X                X    X
X      X           X          X
X                        X    X
X     X                       X
X              X      &    X  X
X                     $       X
X                  X  X       X
X    X                        X
X                  $          X
X                    X      X X
X                 X    *  $    X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX

YOUR MOVE?0

***** ZAP ! !  ---  YOU KILLED ONE.
***** ZAP ! !  ---  YOU KILLED ONE.
*** YOU'VE BEEN DESTROYED BY A LUCKY COMPUTER ***

READY.
```

Program listing

```
100 DIM A(15,30),B(2,6)
110 A8=15:A9=30
120 CLS
130 PRINT "YOU ARE THE ('*'). THE ATTACKERS ARE THE ('$')."
140 PRINT "THE MINES ARE THE ('X'). THE TANK IS ('&')."
150 PRINT:PRINT "MOVES ARE:","4,3,2"
160 PRINT ,"5,*,1":PRINT ,"6,7,8":PRINT
170 PRINT "A MOVE OF '9' WILL PUT YOU ANYWHERE. (2 CHANCES)."
180 FOR B=1 TO A8:FOR C=1 TO A9:A(B,C)=20:X=INT(A9*RND(0))
190 IF X<>5 THEN 200 ELSE A(B,C)=5
200 NEXT C:NEXT B:N3=0
210 N2=2:REM THIS IS THE NUMBER OF TIMES MOVE 9 CAN BE USED
```

```
220 FOR D=1 TO A9:A(1,D)=5:A(A8,D)=5:NEXT D
230 FOR D=1 TO A8:A(D,1)=5:A(D,A9)=5:NEXT D
240 GOTO 270
250 H=INT(A8*RND(0))+1:I=INT(A9*RND(0))+1
260 IF A(H,I)<>20 THEN 250 ELSE RETURN
270 FOR D=1 TO 7:GOSUB 250
275 A(H,I)=15:IF D<>7 THEN 290
280 A(H,I)=10:J=H:K=I:GOTO 310
290 IF D<>1 THEN 300 ELSE A(H,I)=25
300 B(1,D)=H:B(2,D)=I
310 NEXT D
320 PRINT:FOR D2=1 TO A8:FOR B2=1 TO A9
330 IF A(D2,B2)=10 THEN 370 ELSE IF A(D2,B2)=15 THEN 380
340 IF A(D2,B2)=5 THEN 360 ELSE IF A(D2,B2)=25 THEN 390
350 PRINT " ";:GOTO 400
360 PRINT "X";:GOTO 400
370 PRINT "*";:GOTO 400
380 PRINT "$";:GOTO 400
390 PRINT "&";
400 NEXT B2:PRINT:NEXT D2
410  PRINT "YOUR MOVE";:INPUT Y:CLS:IF Y=0 THEN 520
420 V=J:W=K:IF Y<9 THEN 440 ELSE IF N2<>0 THEN 490
430 PRINT "ILLEGAL MOVE.":GOTO 410
440 IF Y<>1 THEN 450 ELSE J=0:GOTO 460
450 J=SGN(Y-5)
460 IF Y>3 THEN 480 ELSE IF Y=3 THEN 470 ELSE K=1: GOTO 510
470 K=0:GOTO 510
480 K=SGN(Y-7):GOTO 510
490 GOSUB 250
495 A(J,K)=20:A(H,I)=10
500 J=H:K=I:N2=N2-1:GOTO 520
510 K=K+W:J=J+V
520 PRINT:IF A(J,K)=5 THEN 750 ELSE A(V,W)=20
530 A(J,K)=10:GOTO 700
540 IF X<>99 THEN 550 ELSE RETURN
550 V=X:M=Y:X=SGN(J-X):Y=SGN(K-Y):X=X+V:Y=Y+M
560 IF A(X,Y)=10 THEN 690 ELSE IF A(X,Y)=20 THEN 680
570 IF A(V,M)=25 THEN 640
580 IF A(X,Y)<>15 THEN 610 ELSE GOSUB 250
585 X=I:Y=M
590 PRINT "TWO ATTACKERS HAVE COLLIDED."
600 A(V,M)=20:A(X,Y)=15:RETURN
610 A(V,M)=20:IF A(X,Y)=25 THEN 620 ELSE A(X,Y)=20
620 GOSUB 630
625 X=99:RETURN
630 PRINT "***** ZAP ! ! --- YOU KILLED ONE.":N3=N3+1:RETURN
640 IF A(X,Y)<>15 THEN 680 ELSE M9=2
650 IF B(1,M9)<>X THEN 660 ELSE IF B(2,M9)=Y THEN 670
660 M9=M9+1:GOTO 650
670 B(1,M9)=99:GOSUB 630
680 A(X,Y)=A(V,M):A(V,M)=20:RETURN
690 PRINT "*** YOU'VE BEEN DESTROYED BY A LUCKY COMPUTER ***":GOTO 770
700 FOR D=1 TO 6:X=B(1,D):Y=B(2,D):GOSUB 540
710 B(1,D)=X:B(2,D)=Y:NEXT D
720 IF N3<>5 THEN 320
730 PRINT:PRINT "YOU'VE DESTROYED ALL YOUR OPPONENTS - YOU WIN !"
740 GOTO 770
750 PRINT:PRINT "YOU TOUCHED A MINE !!!!!!!"
760 PRINT "***** ZAP ***** YOU'RE DEAD !!"
770 END
```

FISH

card game of fish

Description

This game is based on the card game of Fish. You play against the computer 1 on 1. The object in play is to form *books*. A book is any 4-of-a-kind set of cards, such as 4 Kings, Queens, Jacks, etc. On getting the fourth card of a book, the player shows all 4, announces he has a book, lays the book down, and plays again. Cards are obtained by asking the computer for certain cards by name; in turn the computer asks you for cards. If you do not have the cards asked for by the computer or if the computer does not have the cards you ask for, then you must go FISH. If the card you pick up from the deck is the card you asked for, then you get to continue with another turn. The game ends when the ownership of all 13 books (52 cards) has been decided. The one with the most books wins.

Be careful—the computer is too smart for cheaters!

Variable list

A( ) = Flags the cards that the player has asked for so the computer can ask for those cards when it gets them

B = Number of books that player has

B1 = Number of books that computer has

C = Number of cards in player's hand

C1 = Number of cards in computer's hand

C2 = Number of times player has cheated

C( ) = Cards in player's hand
C1( ) = Cards in computer's hand
D = Number of cards picked from deck
D( ) = Contains shuffled deck
N( ) = Number of cards player has of each kind
N1( ) = Number of cards computer has of each kind
R( ) = Number of times the computer has asked for a particular card
V = Card number picked

Sample run

```
THIS IS A CARD GAME OF FISH.  PLAY AS YOU WOULD
NORMALLY, AS NO CHEATING IS ALLOWED!!  NUMBERS
ARE TO BE ENTERED WHEN SPECIFIED FOR INPUTS.

ENTER A 1 FOR AN ACE, A 11 FOR A JACK
A 12 FOR A QUEEN, AND A 13 FOR A KING.

GOOD LUCK!!


DO YOU WANT TO GO FIRST (1=YES)?0


THIS IS YOUR HAND :  6  7  JACK 5  8
DO YOU HAVE ANY KINGS? (0=FISH, 1=YES)?0

YOUR TURN.

WHAT CARD (BY NUMBER) ARE YOU LOOKING FOR?6

I HAVE 1 OF THEM.

YOUR TURN.

THIS IS YOUR HAND :  6  7  JACK 5  8  6
WHAT CARD (BY NUMBER) ARE YOU LOOKING FOR?7

GO FISH.
YOU FISHED A 3 .


THIS IS YOUR HAND :  6  7  JACK 5  8  6  3
DO YOU HAVE ANY 8 S? (0=FISH, 1=YES)?1
HOW MANY?1

THIS IS YOUR HAND :  6  7  JACK 5  6  3
DO YOU HAVE ANY 9 S? (0=FISH, 1=YES)?0

YOUR TURN.

WHAT CARD (BY NUMBER) ARE YOU LOOKING FOR?9

PLEASE DON'T CHEAT, IT'S NOT POLITE!
WHAT CARD (BY NUMBER) ARE YOU LOOKING FOR?6
```

```
GO FISH.
YOU FISHED A ACE.


THIS IS YOUR HAND :  6  7  JACK 5  6  3  ACE
DO YOU HAVE ANY 10 S? (0=FISH, 1=YES)?0

YOUR TURN.

WHAT CARD (BY NUMBER) ARE YOU LOOKING FOR?8

STOP CHEATING.
WHAT CARD (BY NUMBER) ARE YOU LOOKING FOR?9

CHEATING AGAIN??  THREE TIMES IS BAD LUCK, WATCH IT!
WHAT CARD (BY NUMBER) ARE YOU LOOKING FOR?6

GO FISH.
YOU FISHED WHAT YOU ASKED FOR!

YOUR TURN.

THIS IS YOUR HAND :  6  7  JACK 5  6  3  ACE 6
WHAT CARD (BY NUMBER) ARE YOU LOOKING FOR?5

GO FISH.
YOU FISHED A 10 .


THIS IS YOUR HAND :  6  7  JACK 5  6  3  ACE 6  10
DO YOU HAVE ANY 2 S? (0=FISH, 1=YES)?0

YOUR TURN.

WHAT CARD (BY NUMBER) ARE YOU LOOKING FOR?3

GO FISH.
YOU FISHED A ACE.


THIS IS YOUR HAND :  6  7  JACK 5  6  3  ACE 6  10  ACE
DO YOU HAVE ANY 4 S? (0=FISH, 1=YES)?0

YOUR TURN.

WHAT CARD (BY NUMBER) ARE YOU LOOKING FOR?5

GO FISH.
YOU FISHED A 7 .


THIS IS YOUR HAND :  6  7  JACK 5  6  3  ACE 6  10  ACE 7
DO YOU HAVE ANY JACKS? (0=FISH, 1=YES)?0
I CAUGHT YOU A FOURTH TIME.  ONCE MORE AND YOU'RE OUT!
DO YOU HAVE ANY JACKS? (0=FISH, 1=YES)?1
HOW MANY?1

THIS IS YOUR HAND :  6  7  5  6  3  ACE 6  10  ACE 7
DO YOU HAVE ANY 2 S? (0=FISH, 1=YES)?1
ENOUGH, ALREADY! FIVE TIMES IS TOO MUCH!!
```

Program listing

FISH

```
100 CLS
110 PRINT "THIS IS A CARD GAME OF FISH.  PLAY AS YOU WOULD"
120 PRINT "NORMALLY, AS NO CHEATING IS ALLOWED!!  NUMBERS"
130 PRINT "ARE TO BE ENTERED WHEN SPECIFIED FOR INPUTS.":PRINT
140 DIM C(35),C1(35),N(12),N1(12),D(51),R(12),A(12)
150 PRINT"ENTER A ONE FOR AN ACE, A 11 FOR A JACK":PRINT "A 12 FOR A";
160 PRINT " QUEEN, AND A 13 FOR A KING.":PRINT:PRINT"GOOD LUCK! !"
170 PRINT:PRINT
180 FOR V=0 TO 12:FOR I=0 TO 3
190 X=INT(RND(0)*52):IF D(X)<>0 THEN 190 ELSE D(X)=V
200 NEXT I:NEXT V:PRINT "DO YOU WANT TO GO FIRST  (1=YES)";
210 INPUT A: PRINT:PRINT
220 FOR I=1 TO 5:GOSUB 600:GOSUB 620:NEXT I
230 IF A=1 THEN 450
240 IF C1<>0 THEN 270 ELSE PRINT "I RAN OUT OF CARDS, ";
250 IF D=52 THEN 260 ELSE PRINT "AND PICKED UP ONE":GOSUB 620:GOTO 270
260 PRINT "BUT ";:GOSUB 620:GOTO450
270 FOR N=3 TO 1STEP-1:FORV=0TO12:IF N1(V)<>N THEN 290
280 IF A(V)<>0 THEN 340
290 NEXT V:NEXT N:L=999:FOR I=0 TO 12:IF N1(I)=0 THEN 310
300 IF R(I))=L THEN 310 ELSE L=R(I)
310 NEXT I:FOR N=3 TO 1 STEP-1:FOR V=0 TO 12
320 IFN1(V)<>N THEN 330 ELSE  IF R(V)<>L THEN 330 ELSE  GOTO 340
330 NEXT V:NEXT N
340 V1=V:GOSUB 970: V=V1: R(V)=R(V)+1
350 PRINT "DO YOU HAVE ANY";:GOSUB 840:PRINT "'S (0=FISH 1=YES)";
360 INPUT A:IF A=0 THEN 420
370 IF N(V)=0 THEN 390
380 PRINT "HOW MANY";:INPUT N:IFN=N(V) THEN 400
390 GOSUB 890:GOTO 350
400 FOR I=1 TO N:C1(C1)=V:N1(V)=N1(V)+1:C1=C1+1:NEXT I
410 GOSUB 760:GOSUB 680: GOTO 240
420 IF N(V)<>0 THEN 390
430 V1=V: GOSUB 620: IF D=52 THEN 450 ELSEIF D(D-1)<>V1 THEN 450
440 PRINT "I FISHED WHAT I ASKED FOR!":GOTO 240
450 PRINT:PRINT "YOUR TURN."
460 IF C<>0 THEN 500 ELSE PRINT "YOU RAN OUT OF CARDS, ";
470 IF D=52 THEN 490 ELSE PRINT "AND PICKED A";:GOSUB600
480 V=D(D-1):GOSUB 840:GOTO 500
490 PRINT "BUT ";:GOSUB 600: GOTO 240
500 GOSUB 970
510 PRINT "WHAT CARD ( BY NUMBER ) ARE LOOKING FOR";:INPUT V
520 PRINT
530 IF V<1 THEN 510
540 IF V<>1 THEN 550 ELSE V=12: GOTO 1020
550 IF V<>10 THEN 560 ELSE V=8: GOTO 1020
560 IF V<>11 THEN 570 ELSE V=9: GOTO 1020
570 IF V<>12 THEN 580 ELSE V=10: GOTO 1020
580 IF V<>13 THEN 590 ELSE V=11: GOTO 1020
590 V=V-2: GOTO 1020
600 IF D=52 THEN 640 ELSE C(C)=D(D):D=D+1:F=0
610 N(C(C))=N(C(C))+1:C=C+1:GOSUB 650:RETURN
620 IF D=52 THEN 640 ELSE C1(C1)=D(D):D=D+1
630 N1(C1(C1))=N1(C1(C1))+1:C1=C1+1:GOSUB 680: RETURN
640 PRINT "THERE ARE NO MORE CARDS LEFT TO PICK":RETURN
650 FOR V=0 TO 12:IF N(V)<>4 THEN 670 ELSE GOSUB 760
660 PRINT "YOU HAVE A BOOK OF";:GOSUB 840:PRINT "'S.":B=B+1
670 NEXT V:GOTO 710
680 FORV=0TO12:IFN1(V)<>4 THEN 700 ELSE GOSUB 800
690 PRINT "I HAVE A BOOK OF";:GOSUB 840:PRINT "'S.":B1=B1+1
700 NEXT V
```

```
710 IF D=52 THEN 720 ELSE RETURN
720 IF C+C1=0 THEN 730 ELSE RETURN
730 PRINT:PRINT "GAME'S OVER! !":IF B<B1 THEN 750
740 PRINT "YOU WON,";B"TO"B1:GOTO 1100
750 PRINT "I WON"B1"TO"B :STOP
760 IF C<1 THEN 790
765 FOR I=0 TO C-1:IFC(I)<>V THEN 780
770 FOR J=I TO C-2:C(J)=C(J+1):NEXT J:C=C-1: GOTO 760
780 NEXT I
790 N(V)=0:A(V)=0:F=0:RETURN
800 IF C1<1 THEN 830
805 FOR I=0 TO C1-1:IF C1(I)<>V THEN 820
810 FOR J=I TO C1-2:C1(J)=C1(J+1):NEXTJ:C1=C1-1:GOTO800
820 NEXT I
830 N1(V)=0:RETURN
840 IFV>8 THEN 850 ELSE PRINT V+2;:RETURN
850 IF V>9 THEN 860 ELSE PRINT " JACK";:RETURN
860 IF V>10 THEN 870 ELSE  PRINT " QUEEN";:RETURN
870 IF V>11 THEN 880 ELSE PRINT  " KING";:RETURN
880 PRINT " ACE";:RETURN
890 C2=C2+1:IF C2=1 THEN 910 ELSE IF C2=2 THEN 920 ELSE IFC2=3 THEN 930
900 IF C2=4 THEN 940 ELSE IF C2=5 THEN 950
910 PRINT "PLEASE DON'T CHEAT IT'S NOT POLITE!":RETURN
920 PRINT "STOP CHEATING.":RETURN
930 PRINT "CHEATING AGAIN??  THREE TIMES IS BAD LUCK, WATCH IT!":RETURN
940 PRINT "I CAUGHT YOU A FORTH TIME.  ONCE MORE AND YOU'RE OUT!":RETURN
950 PRINT "ENOUGH ALREADY! FIVE TIMES IS TOO MUCH! !"
960 GOTO 960
970 IF F=0 THEN 980 ELSE PRINT:RETURN
980 PRINT :PRINT "THIS IS YOUR HAND ";:F=1
990 IF C<>0 THEN 1000 ELSE PRINT "EMPTY";:PRINT: RETURN
1000 PRINT ": ";:FOR I=0 TO C-1:V=C(I):GOSUB 840:NEXT I
1010 PRINT :RETURN
1020 IFN(V)<>0 THEN 1030 ELSE GOSUB 890:GOTO 510
1030 A(V)=1:IF N1(V)=0 THEN 1060 ELSE PRINT "I HAVE"N1(V)"OF THEM."
1040 FOR I=1 TO N1(V):C(C)=V:C=C+1:N(V)=N(V)+1:NEXT I
1050 F=0:GOSUB 800:GOSUB 650:GOTO 450
1060 PRINT "GO FISH.":V1=V:GOSUB 600: IF D=52 THEN 240
1070 IF D(D-1)=V1 THEN 1090 ELSE PRINT "YOU FISHED A";
1080 V=D(D-1):GOSUB 840: PRINT ".":PRINT: GOTO 240
1090 PRINT "YOU FISHED WHAT YOU ASKED FOR!":GOTO 450
1100 END
```

GOLF

18 holes of golf

Description

You play assisted by the computer in this simulated golf game.

Every hole on a golf course falls into one of 3 categories: par 3, par 4, or par 5. With an allowance being made for 2 strokes (swing of the golf club) on each putting green (where the golf hole is located), *par* is the score that a top-notch golfer would be expected to make on each of the holes located throughout the golf course. Therefore, on a par 3 hole you are expected to hit the putting green in a single stroke off the tee (where the golf ball is initially hit) and take 2 putts. On a par 4 you are expected to reach the putting green in 2 strokes. And on a par 5, you should reach the green in 3 strokes.

The total of all the different pars adds up to par for the entire course. Most courses have a total par of 72 consisting of 10 par 4s, 4 par 5s, and 4 par 3s.

Some of the scoring terms used in golf and in this computer program are as follows:

"Birdie"—1 stroke less than par.
"Eagle"—2 strokes less than par.
"Double Eagle"—3 strokes less than par.
"Ace" or "Hole in One"—1 stroke into the hole.
"Bogey"—1 stroke over par.
"Double Bogey"—2 strokes over par.
"Handicap"—The number of strokes over par in which your average game is played. For example, if your average is 85 over a par 72 course, then your handicap is 85 - 72 or *13*. Thus, 13 strokes will be deleted from your total score in competition stroke-play.

Some of the terms used in golf and in the computer program are as follows:

"Pin"—Golf hole.

"Fairway"—The lane of grass between the tee and the green. Usually the fairway will have obstacles such as water hazards, trees, rough, and sand traps.

"Rough"—High grass.

"Sand Trap/Bunker"—A shallow pit of sand.

"Water Hazard"—A pond of water.

Before the computer game starts, the length of each hole and par are given to you at the start of each hole. The clubs are chosen according to the yardage desired. Your putting stroke is measured by a putt potency given by the computer. Be cautious—there are trees, rough, sand traps, and water hazards. The computer is nice to you, however; it gives you your handicap!

Program notes

Line 1290–1310 has a set of DATA statements. The numbers in the DATA statement are in groups of 4, each group describing the terrain and description for its respective hole. For example:

1290 DATA A,B,C,D,A,B,C,D, ...

where A is distance,
B is par for the course,
C is the description of the terrain to the right, and
D is the description of the terrain to the left.

The descriptions are as follows. If the values of C or D are:

1. THEN THE COMPUTER PRINTS "FAIRWAY"
2. THEN THE COMPUTER PRINTS "ROUGH"
3. THEN THE COMPUTER PRINTS "TREES"
4. THEN THE COMPUTER PRINTS "ADJACENT FAIRWAY"
5. THEN THE COMPUTER PRINTS "TRAP"
6. THEN THE COMPUTER PRINTS "WATER"

Variable list

C = Club number picked by player
D = Distance from tee to hole
D1 = Yards ball traveled
D2 = Distance of ball from cup
F = Current hole number
G1 = Number of holes for current game
G2 = Total shots for course by player
G3 = Total par for course
H = Handicap of player
J = Number of penalty strokes assessed

L( ) = Contains location of obstructions for current hole
N = Percent of a shot being dubbed in a trap
O = Number of yards ball is out of line with hole
P = Par for hole
Q = Percentage of shot going bad
S1 = Number of shots on current hole
S2 = Number of shots on hole
W = Percent of swing for clubs 23-29
Z9 = Putt potency number

Sample run

```
GOLF GAME.

WHAT IS YOUR HANDICAP?10
0=HOOK, 1=SLICE, 2=DISTANCE, 4=TRAP SHOTS, 5=PUTTING
WHICH ONE IS YOUR WORST?4


SELECTION OF CLUBS:

YARDAGE DESIRED                         SUGGESTED CLUBS

  0 TO 100                                   29 TO 23
100 TO 200                                   19 TO 13
200 TO 280                                    4 TO  1

PERCENT OF SWING ON CLUBS 23 TO 29 ARE .01 TO .99
CHOOSE PUTT POTENCY BY DISTANCE TO HOLE.
YOUR PUTT POTENCY MUST BE BETWEEN 1 AND 25


YOU ARE AT HOLE 1 , DISTANCE 361 YARDS, PAR 4
ON YOUR RIGHT IS ADJACENT FAIRWAY
ON YOUR LEFT IS ROUGH
PICK A CLUB?2

YOU SLICED- BADLY.
SHOT WENT 238 YARDS.  IT'S 132 YARDS FROM THE CUP.
BALL IS 48 YARDS OFF LINE...IN ADJACENT FAIRWAY
PICK A CLUB?18

ON THE GREEN 36 FEET FROM THE PIN.
PUTT POTENCY NUMBER?25
YOU HOLED IT.

SCORE ON HOLE 1 WAS 3

TOTAL PAR FOR 1 HOLES IS 4 .  YOUR TOTAL IS 3 .
A BIRDIE.


YOU ARE AT HOLE 2 , DISTANCE 389 YARDS, PAR 4
ON YOUR RIGHT IS TREES
ON YOUR LEFT IS TREES
PICK A CLUB?1
```

```
YOU SLICED- SHOT WENT 230 YARDS.  IT'S 162 YARDS FROM THE CUP.
BALL IS 33 YARDS OFF LINE...IN TREES
PICK A CLUB?15

ON THE GREEN 42 FEET FROM THE PIN.
PUTT POTENCY NUMBER?20
PASSED BY CUP.
ON THE GREEN 5 FEET FROM THE PIN.
PUTT POTENCY NUMBER?2
YOU HOLED IT.

SCORE ON HOLE 2 WAS 4

TOTAL PAR FOR 2 HOLES IS 8 .  YOUR TOTAL IS 7 .
A PAR. NICE GOING.


YOU ARE AT HOLE 3 , DISTANCE 206 YARDS, PAR 3
ON YOUR RIGHT IS ADJACENT FAIRWAY
ON YOUR LEFT IS ROUGH
PICK A CLUB?4

BALL HIT TREE - BOUNCED INTO ROUGH 131  YARDS FROM HOLE.
PICK A CLUB?16

YOU DUBBED IT.
SHOT WENT 35 YARDS.  IT'S 96 YARDS FROM THE CUP.
BALL IS 4 YARDS OFF LINE...IN FAIRWAY
PICK A CLUB?19

BALL HIT TREE - BOUNCED INTO ROUGH 21  YARDS FROM HOLE.
PICK A CLUB?29

PERCENT FULL SWING?.2

ON THE GREEN 3 FEET FROM THE PIN.
PUTT POTENCY NUMBER?2
YOU HOLED IT.

SCORE ON HOLE 3 WAS 5

TOTAL PAR FOR 3 HOLES IS 11 .  YOUR TOTAL IS 12 .


YOU ARE AT HOLE 4 , DISTANCE 500 YARDS, PAR 5
ON YOUR RIGHT IS OUT OF BOUNDS
ON YOUR LEFT IS ROUGH
PICK A CLUB?1

YOU SLICED- SHOT WENT OUT OF BOUNDS.
PENALTY STROKE ASSESSED.
PICK A CLUB?1

SHOT WENT 235 YARDS.  IT'S 265 YARDS FROM THE CUP.
BALL IS 4 YARDS OFF LINE...IN FAIRWAY
PICK A CLUB?1

SHOT WENT 238 YARDS.  IT'S 52 YARDS FROM THE CUP.
BALL IS 44 YARDS OFF LINE...IN FAIRWAY
PICK A CLUB?28

PERCENT FULL SWING?.4

ON THE GREEN 9 FEET FROM THE PIN.
PUTT POTENCY NUMBER?5
YOU HOLED IT.
```

```
SCORE ON HOLE 4 WAS 6

TOTAL PAR FOR 4 HOLES IS 16 .  YOUR TOTAL IS 18 .


YOU ARE AT HOLE 5 , DISTANCE 408 YARDS, PAR 4
ON YOUR RIGHT IS ROUGH
ON YOUR LEFT IS ADJACENT FAIRWAY
PICK A CLUB?
```

Program listing

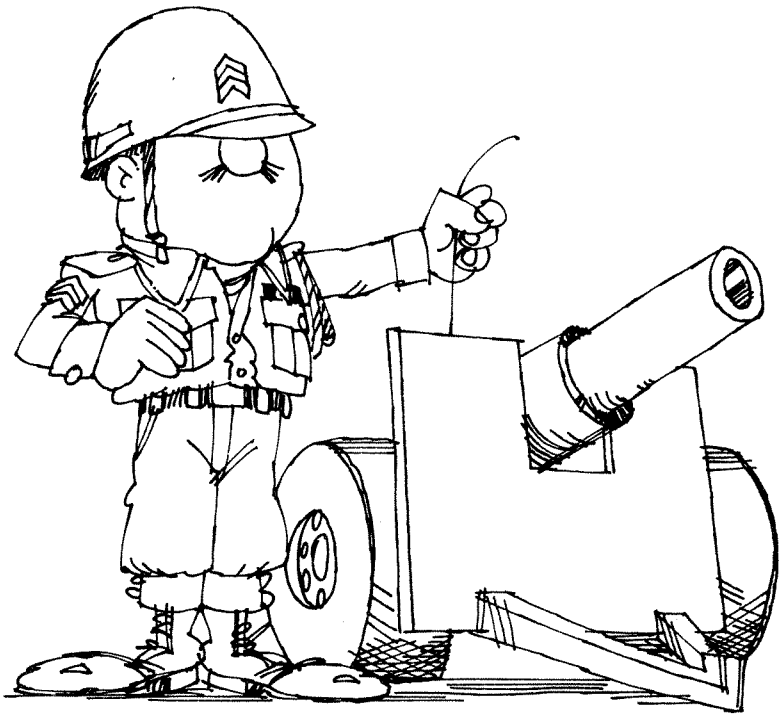
```
100 CLS:PRINT "GOLF GAME.":PRINT
110 DIM L(10):G100=18:G2=0:G3=0:A=0:N=.8:S2=0:F=1
120 PRINT "WHAT IS YOUR HANDICAP";:INPUT H
130 IF H)30 THEN 470:IF H(0 THEN 470
140 PRINT "H=HOOK, S=SLICE, D=DISTANCE, T=TRAP SHOT, P=PUTTING"
150 PRINT "WHICH ONE IS YOUR WORST";:INPUT T$
160 IF T$="H" THEN T=0 ELSE IF T$="S" THEN T=1 ELSE IF T$="D" THEN T=2 ELSE IF T
$="T" THEN T=4 ELSE IF T$="P" THEN T=5
165 CLS
170 Z9=INT(30*RND(0))+15:IF T()5 THEN 180 ELSE Z9=Z9-5
180 PRINT "SELECTION OF CLUBS:":PRINT
190 PRINT "YARDAGE DESIRED"TAB(35)"SUGGESTED CLUBS"
200 PRINT
210 PRINT "  0 TO 100"TAB(40)"29 TO 23"
220 PRINT "100 TO 200"TAB(40)"19 TO 13"
230 PRINT "200 TO 280"TAB(40)" 4 TO  1"
240 PRINT:PRINT "PERCENT OF SWING ON CLUBS 23 TO 29 ARE .01 TO .99"
250 PRINT "CHOOSE PUTT POTENCY BY DISTANCE TO HOLE."
260 PRINT "YOUR PUTT POTENCY MUST BE BETWEEN 1 AND"Z9
280 L(0)=0:J=0:Q=0:S2=S2+1:K=0
290 IF F=1 THEN 380
300 PRINT "SCORE ON HOLE"F-1"WAS"S1:GOTO 1320
310 IF S1)P+2 THEN 330 ELSE IF S1=P THEN 340
320 IF S1=P-1 THEN 350 ELSE IF S1=P-2 THEN 360 ELSE 380
330 PRINT "KEEP YOUR HEAD DOWN.":GOTO 380
340 PRINT "A PAR. NICE GOING.":GOTO 380
350 PRINT "A BIRDIE.":GOTO 380
360 IF P=3 THEN 370:PRINT "A GREAT BIG EAGLE.":GOTO 380
370 PRINT "A HOLE IN ONE"
380 IF F=19 THEN 1710 ELSE S1=0
390 IF S1=0 THEN 1230
400 IF L(0)(1 THEN 970 ELSE X=0: IF L(0))5 THEN 990H
410 PRINT "SHOT WENT"D1"YARDS. IT'S"D2"YARDS FROM THE CUP."
420 PRINT "BALL IS";INT(O);"YARDS OFF LINE...IN ";
430 GOSUB 440:GOTO 540
440 ON L(X) GOTO 480,490,500,510,520,530
460 PRINT "OUT OF BOUNDS":RETURN
470 PRINT "PGA RULES HANDICAP = 0 TO 30":GOTO 120
480 PRINT "FAIRWAY":RETURN
490 PRINT "ROUGH":RETURN
500 PRINT "TREES":RETURN
510 PRINT "ADJACENT FAIRWAY":RETURN
520 PRINT "TRAP":RETURN
530 PRINT "WATER":RETURN
```

```
540 A=1:PRINT "PICK A CLUB";:INPUT C:PRINT
550 IF C<1 THEN 580 ELSE IF C>29 THEN 580 ELSE IF C>4 THEN 590
560 IF L(0)<5 THEN 600 ELSE IF C>7 THEN 600 ELSE 580
570 S1=S1-1
580 PRINT "THAT CLUB IS NOT IN BAG.":PRINT:GOTO 540
590 IF C<12 THEN 580 ELSE C=C-6:GOTO 560
600 S1=S1+1:W=1:IF C>13 THEN 810
610 IF INT(F/3)=F/3 THEN 770
620 IF C<4 THEN 630 ELSE 640
630 IF L(0)=2 THEN 700
640 IF S1>7 THEN 710
650 D1=INT(((30-H)*2.5+187-((30-H)*.25+15)*C/2)+25*RND(0))
660 D1=INT(D1*W):IF T=2 THEN 980
670 O=(RND(0)/.8)*(2*H+16)*ABS(TAN(D1*3.500000E-03))
680 D2=INT(SQR(O^2+ABS(D-D1)^2))
690 IF D-D1<0 THEN 720 ELSE 740
700 PRINT "YOU DUBBED IT.":D1=35:GOTO 670
710 IF D<200 THEN 1050 ELSE 650
720 IF D2<20 THEN 740
730 PRINT "TOO MUCH CLUB. PAST THE HOLE."
740 B=D:D=D2
750 IF D2>27 THEN 880 ELSE IF D2>20 THEN 950 ELSE IF D2>.5 THEN 960
760 L(0)=9:GOTO 1190
770 IF S2+Q+(10*(F-1)/18)<(F-1)*(72+((H+1)/.85))/18 THEN 790
780 GOTO 620
790 Q=Q+1
800 IF S1/2<>INT(S1/2) THEN 850 ELSE 700
810 PRINT "PERCENT FULL SWING";:INPUT W:PRINT
820 IF W>1 THEN 570
830 IF L(0)=5 THEN 1040
840 IF C=14 THEN 640 ELSE C=C-10:GOTO 640
850 IF D<95 THEN 700
860 PRINT "BALL HIT TREE - BOUNCED INTO ROUGH"D-75;" YARDS FROM HOLE."
870 D=D-75:GOTO 540
880 IF O<30 THEN 970 ELSE IF J>0 THEN 970 ELSE IF T>0 THEN 920
890 S9=(S2+1)/15:IF INT(S9)=S9 THEN 930
900 PRINT "YOU HOOKED- ";:L(0)=L(2)
910 IF O>45 THEN 940 ELSE GOTO 390
920 S9=(S2+1)/15:IF INT(S9)=S9 THEN 900
930 PRINT "YOU SLICED- ";:L(0)=L(1):GOTO 910
940 PRINT "BADLY.":GOTO 390
950 L(0)=5:GOTO 390
960 L(0)=8:D2=INT(D2*3):GOTO 1090
970 L(0)=1:GOTO 390
980 D1=INT(.85*D1):GOTO 670
990 IF L(0)>6 THEN 1030
1000 PRINT "SHOT WENT INTO WATER."
1010 S1=S1+1
1020 PRINT "PENALTY STROKE ASSSESSED.":J=J+1:L(0)=1:D=B:GOTO 540
1030 PRINT "SHOT WENT OUT OF BOUNDS.":GOTO 1010
1040 IF T=3 THEN 1060
1050 D2=1+(3+INT((80/(40-H))*(RND(0))*3)):GOTO 1090
1060 IF R*RND(0)>N THEN 1080 ELSE N=N*.2
1070 PRINT "SHOT DUBBED, STILL IN TRAP.":GOTO 540
1080 N=.8:GOTO 1050
1090 PRINT "ON THE GREEN,"D2"FEET FROM PIN."
1100 PRINT "PUTT POTENCY NUMBER";:INPUT I:IF I>Z9 THEN 1120
1110 S1=S1+1:IF D2>I THEN 1140 ELSE 1130
1120 PRINT "MUST BE BETWEEN 1 AND"Z9:GOTO 1100
1130 IF S1+1-P>(H*.072)+2 THEN 1190
1140 IF S1>7 THEN 1190 ELSE IF T=5 THEN 1210
1150 P9=INT((I*RND(0)+2)+I)
1160 IF D2/Z9<.4 THEN 1170 ELSE P9=P9+INT((I/100)*D2)
1170 D2=D2-P9
1180 IF D2<-2 THEN 1220 ELSE IF D2>2 THEN 1200
1190 PRINT "YOU HOLED IT.":PRINT:F=F+1:GOTO 280
1200 PRINT "PUTT SHORT.":D2=INT(D2):GOTO 1090
```

```
1210 D2=D2-((I*RND(0)):GOTO 1180
1220 PRINT "PASSED BY CUP.":D2=-D2:GOTO 1090
1230 READ D,P,L(1),L(2):PRINT
1240 PRINT "YOU ARE AT HOLE"F", DISTANCE"D"YARDS, PAR"P
1250 G3=G3+P
1260 PRINT "ON YOUR RIGHT IS ";:X=1:GOSUB 440
1270 PRINT "ON YOUR LEFT IS ";:X=2:GOSUB 440:GOTO 540
1280 RETURN
1290 DATA 361,4,4,2,389,4,3,3,206,3,4,2,500,5,7,2,408,4,2,4,359,4,6,4
1300 DATA 424,4,4,2,388,4,4,4,196,3,7,2,400,4,7,2,560,5,7,2,132,3,2,2
1310 DATA 357,4,4,4,294,4,2,4,475,5,2,3,375,4,4,2,180,3,6,2,550,5,6,,6
1320 PRINT:G2=G2+S1
1330 PRINT "TOTAL PAR FOR"F-1"HOLES IS"G3". YOUR TOTAL IS"G2"."
1340 IF G1()F-1 THEN 310 ELSE END
```

GUNNER

fire
a
field
artillery
cannon



Description

This program allows you to vector in on a stationary target. You give orders for angle of fire, and the computer either tells you if the target is destroyed or how far you missed in yards. The artillery piece you are firing has a range of 0 to 90 degrees. Don't waste your ammo. You only have 10 shells to play with!

Variable list

A = Angle for shot
B = Angle picked by player
G = Total number of shots in game
H = Total number of targets destroyed
I = Total number of direct hits
L = Number of yards shot traveled based on player's angle
P = Shells expended in current round
Q = Number of objects shot at
S = Number of yards away from object

T1 = Total number of targets in game

T9 = Percentage of shots hit

Z = Variable used in determining number of yards to object

Sample run

```
THIS IS A GUNNERY GAME

INSTRUCTIONS?  (1 FOR YES)?1
  WELCOME TO BUNKER 7.  YOU ARE LOCATED ONLY A FEW
HUNDRED YARDS FROM THE ENEMY TRENCHES.  YOU ARE NOW
THE GUNNERY COMMANDER.  IT IS YOUR DUTY TO DETERMINE
THE ANGLE OF TROJECTORY AT WHICH TO FIRE YOUR
ARTILARY.  HOWEVER, THESE ARE HARD TIMES AND YOU WILL BE
LIMITED TO 10 SHELLS PER TARGET.  NOTE--THE GUN HAS
A RANGE OF 0 TO 90 DEGREES.  GOOD LUCK !!!

SIR, THERE IS A MACHINE GUN AT 845 YARDS.
.........................................

WHAT ARE YOUR ORDERS FOR THE ANGLE OF FIRE?25
A MISS BY 64 YARDS, TRY AGAIN.

ANGLE--?27
BANG, TARGET DESTROYED !!!

 2 SHELL(S) EXPENDED.

WE HAVE SIGHTED ANOTHER TARGET.
SHALL WE FIRE? (1=YES)?1


SIR, LOOK ANOTHER MACHINE GUN, AT  708 YARDS.
.............................................

WHAT ARE YOUR ORDERS FOR THE ANGLE OF FIRE?23
A MISS BY 26 YARDS, TRY AGAIN.

ANGLE--?22
BANG, TARGET DESTROYED !!!

 2 SHELL(S) EXPENDED.

WE HAVE SIGHTED ANOTHER TARGET.
SHALL WE FIRE? (1=YES)?1


THEY ARE CHARGING, NOW ONLY 758 YARDS AWAY.
...........................................

WHAT ARE YOUR ORDERS FOR THE ANGLE OF FIRE?24
BANG, TARGET DESTROYED !!!

 1 SHELL(S) EXPENDED.

WE HAVE SIGHTED ANOTHER TARGET.
SHALL WE FIRE? (1=YES)?1

THERE, A TANK AT 932 YARDS.
...........................
```

```
WHAT ARE YOUR ORDERS FOR THE ANGLE OF FIRE?32
A MISS BY 15 YARDS, TRY AGAIN.

ANGLE--?33
BANG, TARGET DESTROYED !!!

 2 SHELL(S) EXPENDED.

WE HAVE SIGHTED ANOTHER TARGET.
SHALL WE FIRE? (1=YES)?1


THEY ARE RUSHING US, 447 YARDS HERE.
.....................................

WHAT ARE YOUR ORDERS FOR THE ANGLE OF FIRE?13.2
BANG, TARGET DESTROYED !!!

 1 SHELL(S) EXPENDED.

WE HAVE SIGHTED ANOTHER TARGET.
SHALL WE FIRE? (1=YES)?1


THERE IS A SUPPORT TRENCH, 348 YARDS AWAY.
.........................................

WHAT ARE YOUR ORDERS FOR THE ANGLE OF FIRE?10
BOOM, DIRECT HIT !!!!!

 1 SHELL(S) EXPENDED.

WE HAVE SIGHTED ANOTHER TARGET.
SHALL WE FIRE? (1=YES)?0


A TOTAL OF 9 SHOTS FIRED OUT OF 6 TARGETS.
THAT IS AN AVERAGE OF 1.5 SHOTS PER TARGET.
A TOTAL OF 6 TARGET(S) DESTROYED.
 1 OF THEM BEING DIRECT HITS.
FINE WORK MEN.  MY RATING WAS 90 %


YOU ARE RATED AS A GENERAL!

READY.
```

Program listing

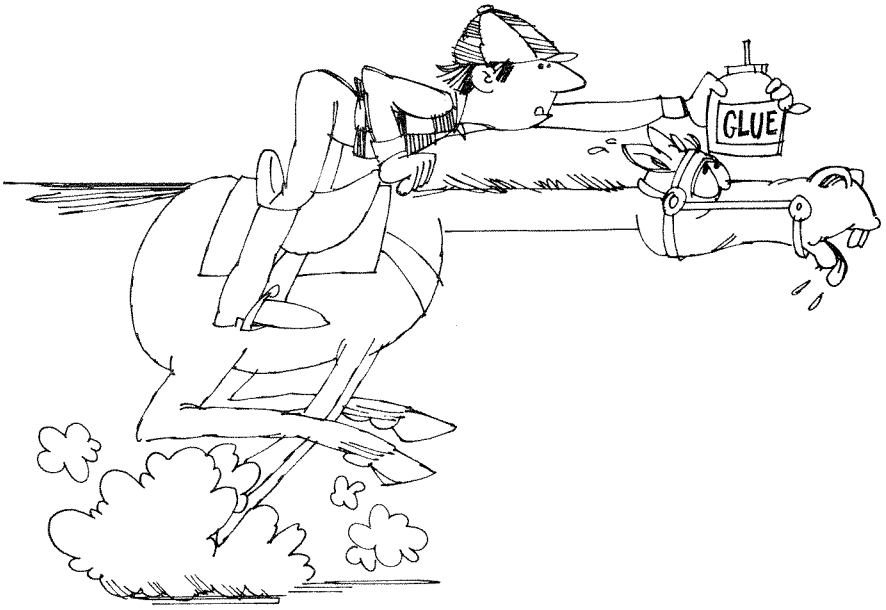
```
100 CLS:PRINT "THIS IS A GUNNERY GAME":PRINT
110 PRINT "INSTRUCTIONS? (Y=YES)";
120 INPUT A$:IF A$="Y" THEN 130 ELSE 200
130 CLS:PRINT "WELCOME TO BUNKER 7. YOU ARE LOCATED ONLY A FEW"
```

```
140 PRINT "HUNDRED YARDS FROM ENEMY TRENCHES. YOU ARE NOW
150 PRINT "THE GUNNERY COMMANDER, IT IS  YOUR DUTY TO DETERMINE"
160 PRINT "THE ANGLE  OF TRAJECTORY AT WHICH TO FIRE YOUR"
170 PRINT "ARTILLERY. HOWEVER, THESE ARE HARD TIMES AND YOU WILL BE"
180 PRINT "LIMITED TO 10 SHELLS PER TARGET. NOTE--THE GUN HAS"
190 PRINT "A RANGE OF 0 TO 90 DEGREES. GOOD LUCK!!!"
200 PRINT:PRINT "HIT -ENTER- TO BEGIN...";:INPUT A
210 A=INT(90*RND(0)):Z=A:V=100:Z=Z*(3.1415/180):F=(SIN(Z))*V
220 S=((2*F)*(SQR((V↑2)-(F↑2))))/9.8:S=INT(S):IF Q<>0 THEN 520
230 PRINT "SIR, THERE IS A MACHINE GUN AT"S"YARDS."
240 PRINT "........................................."
250 PRINT
260 PRINT "WHAT ARE YOUR ORDERS FOR THE ANGLE OF FIRE";
270 P=1:INPUT B:GOTO 310
280 PRINT:P=P+1:IF P=11 THEN 470 ELSE PRINT "ANGLE--";:INPUT B
290 IF B>90 THEN 370 ELSE IF B<0 THEN 370
300 IF B=90 THEN 380
310 E=B:E=E*(3.1415/180):O=SIN(E)*V:L=((2*O)*(SQR((V↑2)-(O↑2))))/9.8
320 L=INT(L):M=ABS(S-L)
330 IF B=0 THEN 390 ELSE C=A+1:D=A-1:IF B>=D THEN 340 ELSE 350
340 IF B<=C THEN 400
350 IF P=10 THEN 450 ELSE IF A=B THEN 400 ELSE IF M=0 THEN 400
360 PRINT "A MISS BY"M"YARDS, TRY AGAIN.":GOTO 280
370 PRINT "THAT ORDER IS OUT OF RANGE, TRY AGAIN.":P=P-1:GOTO 280
380 PRINT "CONGRATULATIONS, YOU HAVE JUST BLOWN UP YOURSELF!":GOTO 280
390 PRINT "YOU HAVE JUST BLOWN UP YOUR OWN LINES!":GOTO 280
400 H=H+1
410 IF B=A THEN 420 ELSE PRINT "BANG, TARGET DESTROYED!!!":GOTO 430
420 I=I+1:PRINT "BOOM, DIRECT HIT!!!!!"
430 PRINT
440 PRINT P"SHELL(S) EXPENDED.":GOTO 470
450 PRINT "A MISS BY"M"YARDS BUT, THOSE ARE ALL YOUR SHELLS."
460 PRINT "THE CORRECT ANGLE OF FIRE WAS"A:PRINT
470 PRINT:PRINT "WE HAVE SIGHTED ANOTHER TARGET."
480 T1=T1+1
490 PRINT "SHALL WE FIRE?  (Y=YES)";:INPUT R$
500 G=G+P:P=90:IF R$="Y" THEN 510 ELSE 690
510 PRINT:PRINT:Q=Q+1:GOTO 200
520 ON Q GOTO 540,570,600,630,660
530 Q=0:GOTO 230
540 PRINT "SIR, LOOK ANOTHER MACHINE GUN, AT"S"YARDS."
550 PRINT "........................................."
560 PRINT:GOTO 260
570 PRINT "THEY ARE CHARGING, NOW ONLY"S"YARDS AWAY."
580 PRINT "........................................."
590 PRINT:GOTO 260
600 PRINT "THERE, A TANK AT"S"YARDS."
610 PRINT "........................."
620 PRINT:GOTO 260
630 PRINT "THEY ARE RUSHING US,"S"YARDS AWAY."
640 PRINT "..................................."
650 PRINT:GOTO 260
660 PRINT "THERE IS A SUPPORT TRENCH,"S"YARDS AWAY."
670 PRINT "........................................."
680 PRINT:GOTO 260
690 PRINT:PRINT:PRINT
700 PRINT "A TOTAL OF"G"SHOTS WERE FIRED OUT OF"T1"TARGETS."
710 T9=INT((G/T1)*100)/100
720 PRINT "THAT IS AN AVERAGE OF"T9"SHOTS PER TARGET."
730 PRINT "A TOTAL OF"H"TARGET(S) WERE DESTROYED."
740 PRINT I;"OF THEM WERE DIRECT HITS."
750 PRINT "FINE WORK MEN. MY RATING WAS";
760 T9=((11-(3/T1))-T9)*10:T9=INT(T9*100)/100:PRINT T9"%"
770 PRINT:PRINT:IF T9<20 THEN 860 ELSE PRINT "YOU ARE RATED AS A ";
780 IF T9>90 THEN PRINT ""GENERAL!":END
790 IF T9>80 THEN PRINT "COLONEL!":END
800 IF T9>70 THEN PRINT "CAPTAIN!":END
```

```
810 IF T9>80 THEN PRINT "LIEUTENANT!":END
820 IF T9>50 THEN PRINT "SERGEANT!":END
830 IF T9>40 THEN PRINT "CORPORAL!":END
840 IF T9>30 THEN PRINT "PRIVATE FIRST CLASS!":END
850 IF T9>20 THEN PRINT "PRIVATE!":END
860 PRINT "YOU HAVE NO RATING! YOU WERE SO HOPELESS!!!"
870 END
```

HORSE

horse race game



Description

The object of this game is to beat the other players by having 1 of your 12 horses finish before 1 of the other player's 12 horses finishes (win). Each player throws a pair of dice. The player then decides which of his 12 horses to advance based on the dice that were thrown. The player can either combine (add) the dice and move the horse with that number 1 length, or he can advance 2 horses 1 length. In the latter situation each horse number would be one of the dice thrown.

For example, let's say that the player throws a 5 and a 3. Then he can advance the 8 horse (5 + 3) 1 length or advance the 5 horse and the 3 horse 1 length each.

Note

Because some numbers are easier to throw than others, the amount of lengths each horse must travel differs according to the probability of throwing that number (see NOTONE probability table.)

Variable list

D = Contents of die one

D1 = Contents of die two

N( ) = Number of lengths each horse has actually traveled for each player

P = Number played by player

Q = Number of players

T( ) = Number of lengths each horse number needs to travel in order to win

Sample run

```
THIS IS A HORSE RACE GAME.

DO YOU WANT THE INSTRUCTIONS?  (1 FOR YES)?1

THIS IS A HORSE RACE GAME.  THE OBJECT OF THE GAME IS TO BEAT
THE OTHER PLAYER BY HAVING ONE OF YOUR TWELVE HORSES FINISH
BEFORE THE OTHER PERSON'S HORSE FINISHES.

THIS IS DONE BY EACH PERSON THROWING A PAIR OF DICE.
AFTER THE DICE ARE THROWN, THAT PLAYER THEN DECIDES WHICH HORSE
TO ADVANCE BASED ON THE DICE THAT WERE THROWN.  YOU CAN EITHER
COMBINE (ADD) THE DICE AND MOVE THAT HORSE ONE LENGTH, OR YOU
CAN ADVANCE TWO HORSES ONE LENGTH, EACH HORSE BEING
ONE OF THE DICE THROWN.

LET'S SAY THAT YOU THROW A 5 AND A 3.  THEN YOU CAN ADVANCE
THE 8 HORSE (5 + 3) ONE LENGTH OR ADVANCE THE 5 HORSE AND THE
3 HORSE ONE LENGTH.

BECAUSE SOME NUMBERS ARE EASIER TO THROW THAN OTHERS, THE AMOUNT
OF LENGTHS EACH HORSE MUST TRAVEL DIFFERS ACCORDING TO THE
PROBABILITY OF THROWING THAT NUMBER.

GOOD LUCK.


HOW MANY PLAYERS?2

PRINT A TABLE?  (1 FOR YES)?1

PERSON  1

 1  - ( )( )( )( )
 2  - ( )( )( )( )( )( )
 3  - ( )( )( )( )( )( )
 4  - ( )( )( )( )( )( )( )( )
 5  - ( )( )( )( )( )( )( )( )
 6  - ( )( )( )( )( )( )( )( )( )( )
 7  - ( )( )( )( )( )( )
 8  - ( )( )( )( )( )( )
 9  - ( )( )( )( )
 10 - ( )( )( )( )
 11 - ( )( )
 12 - ( )( )

PERSON  2

 1  - ( )( )( )( )
 2  - ( )( )( )( )( )( )
 3  - ( )( )( )( )( )( )
 4  - ( )( )( )( )( )( )( )( )
 5  - ( )( )( )( )( )( )( )( )
 6  - ( )( )( )( )( )( )( )( )( )( )
```

```
 7  - (  )(  )(  )(  )(  )
 8  - (  )(  )(  )(  )(  )
 9  - (  )(  )(  )
 10 - (  )(  )(  )
 11 - (  )(  )
 12 - (  )(  )


 PLAYER  1 'S TURN.

 YOU THREW A  2 AND A  4
 WHAT NUMBER DO YOU PLAY?2

 PLAYER  2 'S TURN.

 YOU THREW A  2 AND A  4
 WHAT NUMBER DO YOU PLAY?6


 PRINT A TABLE?  (1 FOR YES)?1

 PERSON  1

  1  - (  )(  )(  )(  )
  2  - (*)(  )(  )(  )(  )(  )
  3  - (  )(  )(  )(  )(  )(  )
  4  - (*)(  )(  )(  )(  )(  )(  )(  )
  5  - (  )(  )(  )(  )(  )(  )(  )(  )
  6  - (  )(  )(  )(  )(  )(  )(  )(  )(  )(  )
  7  - (  )(  )(  )(  )(  )(  )
  8  - (  )(  )(  )(  )(  )(  )
  9  - (  )(  )(  )(  )
  10 - (  )(  )(  )(  )
  11 - (  )(  )
  12 - (  )(  )

 PERSON  2

  1  - (  )(  )(  )(  )
  2  - (  )(  )(  )(  )(  )(  )
  3  - (  )(  )(  )(  )(  )(  )
  4  - (  )(  )(  )(  )(  )(  )(  )(  )
  5  - (  )(  )(  )(  )(  )(  )(  )(  )
  6  - (*)(  )(  )(  )(  )(  )(  )(  )(  )(  )
  7  - (  )(  )(  )(  )(  )(  )
  8  - (  )(  )(  )(  )(  )(  )
  9  - (  )(  )(  )(  )
  10 - (  )(  )(  )(  )
  11 - (  )(  )
  12 - (  )(  )


 PLAYER  1 'S TURN.

 YOU THREW A  6 AND A  1
 WHAT NUMBER DO YOU PLAY?1

 PLAYER  2 'S TURN.

 YOU THREW A  5 AND A  4
 WHAT NUMBER DO YOU PLAY?5


 PRINT A TABLE?  (1 FOR YES)?0
```

```
PLAYER  1 'S TURN.

YOU THREW A  4 AND A  1
WHAT NUMBER DO YOU PLAY?4

PLAYER  2 'S TURN.

YOU THREW A  4 AND A  5
WHAT NUMBER DO YOU PLAY?4


PRINT A TABLE?  (1 FOR YES)?0

PLAYER  1 'S TURN.

YOU THREW A  3 AND A  5
WHAT NUMBER DO YOU PLAY?3

PLAYER  2 'S TURN.

YOU THREW A  1 AND A  2
WHAT NUMBER DO YOU PLAY?3


PRINT A TABLE?  (1 FOR YES)?0

PLAYER  1 'S TURN.

YOU THREW A  5 AND A  6
WHAT NUMBER DO YOU PLAY?11

PLAYER  2 'S TURN.

YOU THREW A  1 AND A  6
WHAT NUMBER DO YOU PLAY?6


PRINT A TABLE?  (1 FOR YES)?0

PLAYER  1 'S TURN.

YOU THREW A  2 AND A  4
WHAT NUMBER DO YOU PLAY?4

PLAYER  2 'S TURN.

YOU THREW A  2 AND A  5
WHAT NUMBER DO YOU PLAY?5


PRINT A TABLE?  (1 FOR YES)?0

PLAYER  1 'S TURN.

YOU THREW A  6 AND A  2
WHAT NUMBER DO YOU PLAY?6

PLAYER  2 'S TURN.

YOU THREW A  6 AND A  1
WHAT NUMBER DO YOU PLAY?6


PRINT A TABLE?  (1 FOR YES)?0

PLAYER  1 'S TURN.
```

```
YOU THREW A  4 AND A  2
WHAT NUMBER DO YOU PLAY?4

PLAYER  2 'S TURN.

YOU THREW A  2 AND A  6
WHAT NUMBER DO YOU PLAY?2


PRINT A TABLE?  (1 FOR YES)?0

PLAYER  1 'S TURN.

YOU THREW A  3 AND A  3
WHAT NUMBER DO YOU PLAY?3

PLAYER  2 'S TURN.

YOU THREW A  5 AND A  2
WHAT NUMBER DO YOU PLAY?5


PRINT A TABLE?  (1 FOR YES)?0

PLAYER  1 'S TURN.

YOU THREW A  2 AND A  6
WHAT NUMBER DO YOU PLAY?5
ILLEGAL MOVE.
WHAT NUMBER DO YOU PLAY?6

PLAYER  2 'S TURN.

YOU THREW A  6 AND A  1
WHAT NUMBER DO YOU PLAY?6


PRINT A TABLE?  (1 FOR YES)?0

PLAYER  1 'S TURN.

YOU THREW A  2 AND A  1
WHAT NUMBER DO YOU PLAY?3

PLAYER  2 'S TURN.

YOU THREW A  5 AND A  4
WHAT NUMBER DO YOU PLAY?5


PRINT A TABLE?  (1 FOR YES)?1

PERSON  1

 1  - (*)(*)( )( )
 2  - (*)(*)(*)(*)(*)( )
 3  - (*)(*)(*)(*)( )( )
 4  - (*)(*)(*)(*)( )( )( )( )
 5  - (*)( )( )( )( )( )( )( )
 6  - (*)(*)(*)( )( )( )( )( )( )( )
 7  - ( )( )( )( )( )( )
 8  - ( )( )( )( )( )( )
 9  - ( )( )( )( )
 10 - ( )( )( )( )
 11 - (*)( )
 12 - ( )( )
```

```
PERSON  2

 1  - (*)(*)(*)( )
 2  - (*)(*)(*)( )( )( )
 3  - (*)( )( )( )( )( )
 4  - (*)(*)(*)( )( )( )( )( )
 5  - (*)(*)(*)(*)(*)( )( )( )
 6  - (*)(*)(*)(*)(*)( )( )( )( )( )
 7  - ( )( )( )( )( )( )
 8  - ( )( )( )( )( )( )
 9  - ( )( )( )( )
 10 - ( )( )( )( )
 11 - ( )( )
 12 - ( )( )


PLAYER  1 'S TURN.

YOU THREW A  5 AND A  5
WHAT NUMBER DO YOU PLAY?5

PLAYER  2 'S TURN.

YOU THREW A  6 AND A  3
WHAT NUMBER DO YOU PLAY?6


PRINT A TABLE?  (1 FOR YES)?0

PLAYER  1 'S TURN.

YOU THREW A  1 AND A  4
WHAT NUMBER DO YOU PLAY?1

PLAYER  2 'S TURN.

YOU THREW A  5 AND A  3
WHAT NUMBER DO YOU PLAY?5


PRINT A TABLE?  (1 FOR YES)?0

PLAYER  1 'S TURN.

YOU THREW A  3 AND A  3
WHAT NUMBER DO YOU PLAY?3



PERSON  1

 1  - (*)(*)(*)( )
 2  - (*)(*)(*)(*)(*)( )
 3  - (*)(*)(*)(*)(*)(*)
 4  - (*)(*)(*)(*)(*)( )( )( )
 5  - (*)(*)(*)( )( )( )( )( )
 6  - (*)(*)(*)( )( )( )( )( )( )( )
 7  - ( )( )( )( )( )( )
 8  - ( )( )( )( )( )( )
 9  - ( )( )( )( )
 10 - ( )( )( )( )
 11 - (*)( )
 12 - ( )( )
```

```
PERSON  2

 1  - (*)(*)(*)( )
 2  - (*)(*)(*)( )( )( )
 3  - (*)(*)(*)( )( )( )
 4  - (*)(*)(*)( )( )( )( )( )
 5  - (*)(*)(*)(*)(*)(*)( )( )
 6  - (*)(*)(*)(*)(*)(*)( )( )( )( )
 7  - ( )( )( )( )( )( )
 8  - ( )( )( )( )( )( )
 9  - ( )( )( )( )
 10 - ( )( )( )( )
 11 - ( )( )
 12 - ( )( )


PLAYER 1 HAS JUST WON WITH THE 3 HORSE.
******CONGRATULATIONS TO PLAYER 1 .


READY.
```

Program listing

```
90 CLS
100 DIM T(12),N(10,12)
110 FOR I=1TO 12:READ T(I):NEXT I
120 DATA 4,6,6,8,8,10,6,6,4,4,2,2
130 PRINT:PRINT "THIS IS A HORSE RACE GAME.":PRINT
140 PRINT "DO YOU WANT INSTRUCTIONS?  (1=YES)";
150 INPUT A:IF A()1 THEN 350
155 CLS
160 PRINT "THIS IS A HORSE RACE GAME.  THE OBJECT OF THE GAME IS TO BEAT"
170 PRINT "THE OTHER PLAYER BY HAVING ONE OF YOUR TWELVE HORSES FINISH"
180 PRINT "BEFORE THE OTHER PERSON'S HORSE FINISHES."
190 PRINT
200 PRINT "THIS IS BY EACH PERSON THROWING A PAIR OF DICE."
210 PRINT "AFTER THE DICE ARE THROWN, THAT PLAYER THEN DECIDES WHICH HORSE"
220 PRINT "TO ADVANCE BASED ON THE DICE THAT WERE THROWN.  YOU CAN EITHER"
230 PRINT "COMBINE (ADD) THE DICE AND MOVE THAT HORSE ONE LENGTH, OR YOU"
240 PRINT "CAN ADVANCE TWO HORSES ONE LENGTH, EACH HORSE BEING"
250 PRINT "ONE OF THE DICE THROWN.":PRINT
260 PRINT "LET'S SAY THAT YOU THROW A 5 AND A 3.  THEN YOU CAN ADVANCE"
270 PRINT "THE 8 HORSE (5 + 3) ONE LENGTH OR ADVANCE THE 5 HORSE AND THE"
280 PRINT "3 HORSE ONE LENGTH."
290 PRINT:PRINT "PRESS ENTER TO CONTINUE ";:INPUT X
295 CLS
300 PRINT "BECAUSE SOME NUMBERS ARE EASIER TO THROW THAN OTHERS, THE"
310 PRINT "AMOUNT OF LENGTHS EACH HORSE MUST TRAVEL DIFFERS ACCORDING TO"
320 PRINT "THE PROBABILITY OF THROWING THAT NUMBER."
330 PRINT:PRINT "G O O D    L U C K   ! ! ! !"
```

```
340 PRINT
350 PRINT "HOW MANY PLAYERS";:INPUT Q
360 IF Q<=0 THEN 350
365 IF Q>10 THEN 350
370 PRINT:GOSUB 650
375 PRINT
380 FOR X=1 TO Q
390 PRINT "PLAYER ";X;"'S TURN.":PRINT
400 D=INT(6*RND(0))+1:D1=INT(6*RND(0))+1
410 PRINT "YOU THREW A ";D;" AND A ";D1
420 PRINT "WHAT NUMBER DO YOU WISH TO PLAY";:INPUT P
430 IF D+D1=P THEN 440
435 GOTO 450
440 N(X,P)=N(X,P)+1:GOTO 540
450 IF D=P THEN 480
460 IF D1=P THEN 470
465 GOTO 530
470 D1=0:GOTO 490
480 D=0
490 N(X,P)=N(X,P)+1
500 IF D1=0 THEN 520
505 P=D1
510 GOTO 440
520 P=D:GOTO 440
530 PRINT:PRINT "ILLEGAL MOVE.":PRINT:GOTO 420
540 FOR P=1 TO 12
550 IF N(X,P)<T(P) THEN 555
553 GOTO 580
555 NEXT P
560 PRINT:NEXT X
570 GOTO 370
580 PRINT:PRINT:GOSUB 670
590 PRINT:PRINT
600 PRINT "PLAYER ";X;" HAS JUST WON WITH THE #";P;" HORSE."
610 PRINT "****** CONGRATULATIONS TO PLAYER ";X;"."
620 PRINT:PRINT
630 PRINT:PRINT
640 GOTO 770
650 PRINT "PRINT A TABLE?  (1 FOR YES)";
660 INPUT A:IF A=1 THEN 670
665 RETURN
670 FOR N=1 TO Q:CLS:PRINT "PERSON ";N:PRINT
680 FOR K=1 TO 12:PRINT K;:IFK>9 THEN 690
685 PRINT " ";
690 PRINT "- ";
700 FOR M=1 TO T(K):PRINT "(";
710 IF N(N,K)<M THEN 715
713 GOTO 720
715 PRINT " ";:GOTO 730
720 PRINT "*";
730 PRINT ")";:NEXT M:PRINT
740 NEXT K
745 FOR W=1 TO 750:NEXT W
750 NEXT N
755 CLS
760 PRINT:PRINT:RETURN
770 END
```

JACKPOT

slot machine game

Description

Let's go to Las Vegas! This game is one of chance. Slot machines are found in most gambling rooms throughout the world. Most slot machines are made up of 3, 4, or more vertical reels (wheels) on which various symbols are marked. The symbols are usually a cherry, orange, bell, plum, apple, and a bar. A handle is pulled in order to spin the wheels which stop eventually to produce *outcomes*. These outcomes are created when symbols appear on the *center line* indicator. Different payoffs are given for winning combinations of symbol outcomes. A *Jackpot* pays the highest and usually, as in the case of this computer game, it is a combination of 3 bar symbols.

In order to "pull the handle" in this computer game, simply hit the return key on your terminal keyboard. Keep plenty of loose change on hand—you'll need it!

Variable list

A( ) = Object the reel stopped on
M = Amount of money owned by player
R( ) = Contents of objects on each reel
W = Number of dollars won in current spin

Jackpot probability table

Outcomes			*Payoff ($)*	*Chance in 8000 plays*	*Probability*	*%*
Cherry	Anything	Anything	3	4 X 14 X 20 = 1120	1120/8000	14
Cherry	Cherry	Anything	5	4 X 6 X 20 = 480	480/8000	6
Orange	Orange	Bar	6	5 X 4 X 1 = 20	20/8000	0.25
Bell	Bell	Orange	8	4 X 6 X 7 = 168	168/8000	2.1
Plum	Plum	Plum	10	3 X 2 X 4 = 24	24/8000	0.3
Apple	Apple	Anything	15	3 X 1 X 18 = 54	54/8000	0.7
Orange	Orange	Orange	18	5 X 4 X 7 = 140	140/8000	1.75
Apple	Apple	Apple	20	3 X 1 X 3 = 9	9/8000	0.1
Bell	Bell	Bell	30	4 X 6 X 5 = 120	120/8000	1.5
Bar	Bar	Bar	200 (Jackpot)	1 X 1 X 1 = 1	1/8000	0.0125

Note: A) The term "anything" used in the payoff table and the probability table is to denote any symbol including cherry, orange, bell, plum, apple, and a bar.

B) The 8000 play combinations figure is derived by recognizing that there are 3 reels on a jackpot machine and each reel has 20 combinations. Therefore, 20 X 20 X 20 = 8000.

Sample run

```
JACKPOT GAME.

DO YOU WANT A LIST OF THE PAYOFFS?  (1=YES)?1

REEL 1          REEL 2          REEL 3          PAYOFF

CHERRY          ANYTHING        ANYTHING        3 DOLLARS
CHERRY          CHERRY          ANYTHING        5 DOLLARS
ORANGE          ORANGE          BAR             6 DOLLARS
BELL            BELL            ORANGE          8 DOLLARS
PLUM            PLUM            PLUM            10 DOLLARS
APPLE           APPLE           ANYTHING        15 DOLLARS
ORANGE          ORANGE          ORANGE          18 DOLLARS
APPLE           APPLE           APPLE           20 DOLLARS
BELL            BELL            BELL            30 DOLLARS
BAR             BAR             BAR             200 DOLLARS
```

```
YOU HAVE $ 15

HIT RETURN TO PULL HANDLE

BAR             CHERRY          PLUM            YOU WIN $ 0

AGAIN?  (1=YES)?1

YOU HAVE $ 14

HIT RETURN TO PULL HANDLE

APPLE           ORANGE          BELL            YOU WIN $ 0

AGAIN?  (1=YES)?1

YOU HAVE $ 13

HIT RETURN TO PULL HANDLE

ORANGE          CHERRY          ORANGE          YOU WIN $ 0

AGAIN?  (1=YES)?1

YOU HAVE $ 12

HIT RETURN TO PULL HANDLE

BELL            CHERRY          BELL            YOU WIN $ 0

AGAIN?  (1=YES)?0

TOO BAD, YOU LOST $ 4

READY.
```

Program listing

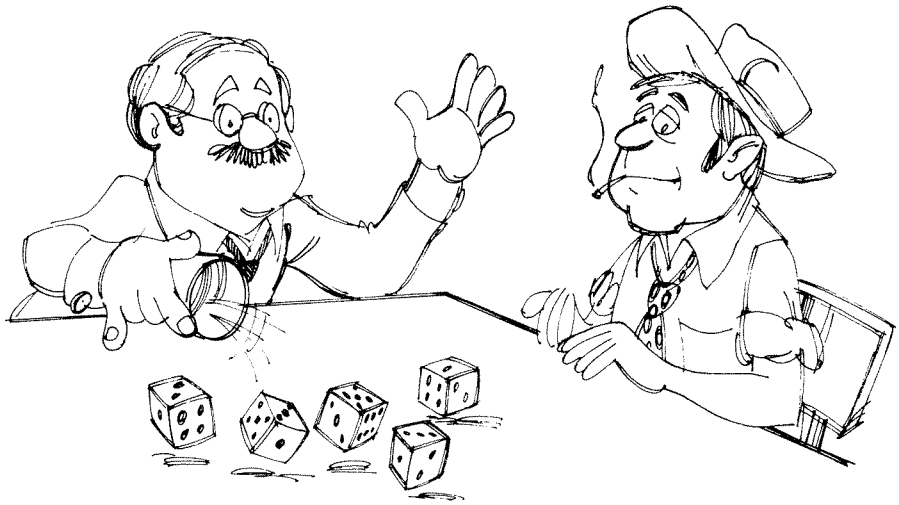
JACKPOT

```
100 CLS
110 PRINT "JACKPOT GAME.":PRINT
120 PRINT "DO YOU WANT A LIST OF PAYOFFS? (Y=YES)";
130 INPUT A$:PRINT:PRINT:IF A$="Y" THEN 135 ELSE 260
135 CLS
140 PRINT "REEL 1","REEL 2","REEL 3","PAYOFF":PRINT
150 PRINT "CHERRY","ANYTHING","ANYTHING","3 DOLLARS"
160 PRINT "CHERRY","CHERRY","ANYTHING","5 DOLLARS"
170 PRINT "ORANGE","ORANGE","BAR","6 DOLLARS"
180 PRINT "BELL","BELL","ORANGE","8 DOLLARS"
190 PRINT "PLUM","PLUM","PLUM","10 DOLLARS"
200 PRINT "APPLE","APPLE","ANYTHING","15 DOLLARS"
210 PRINT "ORANGE","ORANGE","ORANGE","18 DOLLARS"
220 PRINT "APPLE","APPLE","APPLE","20 DOLLARS"
230 PRINT "BELL","BELL","BELL","30 DOLLARS"
240 PRINT "BAR","BAR","BAR","200 DOLLARS"
```

```
250 PRINT:PRINT "HIT -ENTER- TO START...";:INPUT A
260 DIM A(3),R(3,20)
270 FOR X=1 TO 20:FOR I=1 TO 3:READ R(I,X):NEXT I:NEXT X
280 DATA 2,4,2,5,1,4,2,2,5,6,4,6,1,1,2
290 DATA 4,2,6,5,4,5,6,1,4,4,5,3,5,5,5,1,1,2,2,2,4,4,4,6,1,3,2
300 DATA 3,4,2,2,1,4,6,2,5,1,4,2,4,6,4,2,1,2
310 M=15
320 CLS:PRINT "YOU HAVE $";M:PRINT
330 PRINT "HIT -ENTER- TO PULL HANDLE";:INPUT A
340 PRINT:PRINT
350 FOR I=1 TO 3:X=INT(20*RND(0))+1:A(I)=R(I,X)
360 GOSUB 620:NEXT I:W=0
370 IF A(1)<>4 THEN 400 ELSE IF A(2)<>4 THEN 520
380 IF A(3)=4 THEN 390 ELSE IF A(3)<>2 THEN 520 ELSE W=8:GOTO 520
390 W=30:GOTO 520
400 IF A(1)<>5 THEN 420 ELSE IF A(2)<>5 THEN 520 ELSE IF A(3)<>5 THEN 520
410 W=10:GOTO 520
420 IF A(1)<>3 THEN 440 ELSE IF A(2)<>3 THEN 520 ELSE IF A(3)<>3 THEN 520
430 W=200:GOTO 520
440 IF A(1)<>1 THEN 460 ELSE IF A(2)=1 THEN 450 ELSE W=3:GOTO 520
450 W=5:GOTO 520
460 IF A(1)<>2 THEN 490 ELSE IF A(2)<>2 THEN 520 ELSE IF A(3)=3 THEN 480
470 IF A(3)<>2 THEN 520 ELSE W=18:GOTO 520
480 W=6:GOTO 520
490 IF A(1)<>6 THEN 520 ELSE IF A(2)<>6 THEN 520 ELSE IF A(3)=3 THEN 510
500 IF A(3)<>6 THEN 520 ELSE W=20:GOTO 520
510 W=15:GOTO 520
520 IF W<>200 THEN 530 ELSE PRINT "***** JACKPOT *****",
530 PRINT "YOU WIN $";W:PRINT
540 M=M-1+W:PRINT "AGAIN? (Y=YES)";
550 INPUT A$:PRINT:IF A$="Y" THEN 320 ELSE PRINT
560 IF M<15 THEN 580 ELSE PRINT "CONGRATULATIONS, YOU WON $";M-15
570 GOTO 680
580 IF M<0 THEN 590 ELSE PRINT "TOO BAD, YOU LOST $";15-M:GOTO 680
590 PRINT "YOU  HAVE 10 DAYS TO PAY ME $";15-M;". AFTER THAT"
600 PRINT "IT IS OUT OF MY HANDS AS TO WHAT HAPPENS TO YOU!"
610 GOTO 680
620 IF A(I)=1 THEN PRINT "CHERRY",:RETURN
630 IF A(I)=2 THEN PRINT "ORANGE",:RETURN
640 IF A(I)=3 THEN PRINT "BAR",:RETURN
650 IF A(I)=4 THEN PRINT "BELL",:RETURN
660 IF A(I)=5 THEN PRINT "PLUM",:RETURN
670 PRINT "APPLE",:RETURN
680 END
```

KISMET

a dice game



Description

The object of this computer-simulated dice game is to roll a set of dice 3 times to obtain a scoring combination and to achieve the highest total score for all games (up to 6 games). The game may be played by 2, 3 or 4 persons. It also can be played solitaire by going for the highest possible score. For the first roll of the dice the player must roll all 5 dice. For the second and third rolls the player may pick up 1, 2, 3, 4, or even 5 of the dice and roll them again. The player may stop after the first roll, but if he chooses to roll 3 times, the third and final roll must be scored.

In each game there are 15 scoring boxes in a vertical column on a score sheet. A player must make his own decision about what and where to score based on his individual strategy.

In the Upper Section (BASIC Section) of the score sheet, there are "Aces" (ones), "Deuces" (twos), "Treys" (threes), "Fours," "Fives," and "Sixes." If a player chooses to score in one of the 6 boxes in the Upper Section, he counts and adds only the dice with the same number and enters the total of the dice in the appropriate score box. A *bonus* section is included for scoring extra points. If the player scores 63–70 in the Upper Section he adds 35 points to his score; for 71–77 he adds 55 points; and for 78 or over he adds 75 points.

The Lower Section (KISMET Section) of the score sheet is played as follows:

A) 2 pair same color—total all dice (points)
B) 3 of a kind—total all dice (points)
C) Straight 1, 2, 3, 4, 5 or 2, 3, 4, 5, 6—30 points
D) Flush (all same color)—35 points
E) Full house—total all dice plus 15 points

F) Full house same color—total all dice plus 20 points
G) 4 of a kind—total all dice plus 25
H) Yarborough—*one* chance to score total of all dice on a low-scoring throw of the dice
I) KISMET (5 of a kind)—total all dice plus 50 points

The grand total is obtained by adding the Upper and Lower Section scores together. Your strategy of rolling the dice and obtaining good scoring combinations is the key to this game!

Variable list

A = Location number picked by player
B( ) = Amount of points for each player broken down by type
D = Current dice amount
D( ) = Dice amount picked for each die
E = Flag to determine if location placement is legal
E = 1 error
E = 0 location okay to use
M = Total points for current board
P = Number of points for location picked
P6 = Player number being processed
P9 = Number of players
Q = Working variable that keeps track of dice being processed
R9 = Number of rounds completed (maximum of 15)
X = Location number picked (for subroutine)
X( ) = Number of times a dice amount has appeared on current throw

Sample run

```
THIS IS THE GAME OF KISMET.

HOW MANY WISH TO PLAY?1

DO YOU WANT A TABLE?  (1 FOR YES)?1

PLAYER  1

1 - ACES                    1 FOR EACH ACE          0
2 - DEUCES                  2 FOR EACH DEUCE        0
3 - TREYS                   3 FOR EACH TREY         0
4 - FOURS                   4 FOR EACH FOUR         0
5 - FIVES                   5 FOR EACH FIVE         0
6 - SIXES                   6 FOR EACH SIX          0

TOTAL BASIC SECTION                                 0

7 - 2 PAIR       SAME COLOR TOTAL DICE              0
8 - 3 OF A KIND             TOTAL DICE              0
9 - STRAIGHT                30 POINTS               0
10- FLUSH        SAME COLOR 35 POINTS               0
```

```
11- FULL HOUSE                TOTAL DICE + 15        0
12- FULL HOUSE  SAME COLOR    TOTAL DICE + 20        0
13- 4 OF A KIND               TOTAL DICE + 25        0
14- YARBOROUGH  FREE TURN     TOTAL DICE             0
15- KISMET      5 OF A KIND   TOTAL DICE + 50        0

TOTAL GAME TOTAL                                     0


PLAYER 1 'S TURN.

DICE  1 IS A 2 RED
DICE  2 IS A 3 GREEN
DICE  3 IS A 6 BLACK
DICE  4 IS A 6 BLACK
DICE  5 IS A 5 RED

HOW MANY TO REPLACE?  (0 TO STOP)?1
ENTER DICE NUMBER?3

YOUR DICE LOOK LIKE THIS:

DICE  1   2 RED
DICE  2   3 GREEN
DICE  3   2 RED
DICE  4   6 BLACK
DICE  5   5 RED

HOW MANY TO REPLACE?  (0 TO STOP)?3
ENTER DICE NUMBER?2
ENTER DICE NUMBER?4
ENTER DICE NUMBER?5

YOUR DICE LOOK LIKE THIS:

DICE  1   2 RED
DICE  2   6 BLACK
DICE  3   2 RED
DICE  4   2 RED
DICE  5   1 BLACK

YOUR DICE TOTAL  13
ENTER THE LOCATION NUMBER?2

2 - DEUCES                    2 FOR EACH DEUCE       6

DO YOU WANT A TABLE?  (1 FOR YES)?0

PLAYER 1 'S TURN.

DICE  1 IS A 1 BLACK
DICE  2 IS A 5 RED
DICE  3 IS A 2 RED
DICE  4 IS A 6 BLACK
DICE  5 IS A 1 BLACK

HOW MANY TO REPLACE?  (0 TO STOP)?3
ENTER DICE NUMBER?2
ENTER DICE NUMBER?3
ENTER DICE NUMBER?4

YOUR DICE LOOK LIKE THIS:

DICE  1   1 BLACK
DICE  2   4 GREEN
DICE  3   4 GREEN
DICE  4   5 RED
DICE  5   1 BLACK
```

```
HOW MANY TO REPLACE?  (0 TO STOP)?3
ENTER DICE NUMBER?1
ENTER DICE NUMBER?4
ENTER DICE NUMBER?5

YOUR DICE LOOK LIKE THIS:

DICE  1   3 GREEN
DICE  2   4 GREEN
DICE  3   4 GREEN
DICE  4   1 BLACK
DICE  5   2 RED

YOUR DICE TOTAL  14
ENTER THE LOCATION NUMBER?1

1 - ACES                        1 FOR EACH ACE        1

DO YOU WANT A TABLE?  (1 FOR YES)?1


PLAYER  1

1 - ACES                        1 FOR EACH ACE        1
2 - DEUCES                      2 FOR EACH DEUCE      6
3 - TREYS                       3 FOR EACH TREY       0
4 - FOURS                       4 FOR EACH FOUR       0
5 - FIVES                       5 FOR EACH FIVE       0
6 - SIXES                       6 FOR EACH SIX        0

TOTAL BASIC SECTION                                   7

7 - 2 PAIR       SAME COLOR   TOTAL DICE             0
8 - 3 OF A KIND               TOTAL DICE             0
9 - STRAIGHT                  30 POINTS              0
10- FLUSH        SAME COLOR   35 POINTS              0
11- FULL HOUSE                TOTAL DICE + 15        0
12- FULL HOUSE   SAME COLOR   TOTAL DICE + 20        0
13- 4 OF A KIND               TOTAL DICE + 25        0
14- YARBOROUGH   FREE TURN    TOTAL DICE             0
15- KISMET       5 OF A KIND  TOTAL DICE + 50        0

TOTAL GAME TOTAL                                      7


PLAYER 1 'S TURN.

DICE  1 IS A 5 RED
DICE  2 IS A 3 GREEN
DICE  3 IS A 5 RED
DICE  4 IS A 2 RED
DICE  5 IS A 3 GREEN

HOW MANY TO REPLACE?  (0 TO STOP)?1
ENTER DICE NUMBER?4

YOUR DICE LOOK LIKE THIS:

DICE  1   5 RED
DICE  2   3 GREEN
DICE  3   5 RED
DICE  4   3 GREEN
DICE  5   3 GREEN

HOW MANY TO REPLACE?  (0 TO STOP)?0

YOUR DICE TOTAL  19
ENTER THE LOCATION NUMBER?11
```

```
11- FULL HOUSE                TOTAL DICE + 15        34

DO YOU WANT A TABLE?  (1 FOR YES)?0

PLAYER 1 'S TURN.

DICE  1 IS A 6 BLACK
DICE  2 IS A 5 RED
DICE  3 IS A 2 RED
DICE  4 IS A 4 GREEN
DICE  5 IS A 5 RED

HOW MANY TO REPLACE?  (0 TO STOP)?2
ENTER DICE NUMBER?1
ENTER DICE NUMBER?4

YOUR DICE LOOK LIKE THIS:

DICE  1   1 BLACK
DICE  2   5 RED
DICE  3   2 RED
DICE  4   6 BLACK
DICE  5   5 RED

HOW MANY TO REPLACE?  (0 TO STOP)?3
ENTER DICE NUMBER?1
ENTER DICE NUMBER?4
ENTER DICE NUMBER?4

YOUR DICE LOOK LIKE THIS:

DICE  1   3 GREEN
DICE  2   5 RED
DICE  3   2 RED
DICE  4   1 BLACK
DICE  5   5 RED

YOUR DICE TOTAL  16
ENTER THE LOCATION NUMBER?2
ILLEGAL LOCATION.
ENTER THE LOCATION NUMBER?1
ILLEGAL LOCATION.
ENTER THE LOCATION NUMBER?14

14- YARBOROUGH  FREE TURN   TOTAL DICE            16

DO YOU WANT A TABLE?  (1 FOR YES)?1

PLAYER  1

1 - ACES                    1 FOR EACH ACE        1
2 - DEUCES                  2 FOR EACH DEUCE      6
3 - TREYS                   3 FOR EACH TREY       0
4 - FOURS                   4 FOR EACH FOUR       0
5 - FIVES                   5 FOR EACH FIVE       0
6 - SIXES                   6 FOR EACH SIX        0

TOTAL BASIC SECTION                               7

7 - 2 PAIR       SAME COLOR TOTAL DICE             0
8 - 3 OF A KIND             TOTAL DICE             0
9 - STRAIGHT                30 POINTS              0
10- FLUSH        SAME COLOR 35 POINTS              0
11- FULL HOUSE              TOTAL DICE + 15        34
12- FULL HOUSE   SAME COLOR TOTAL DICE + 20        0
13- 4 OF A KIND             TOTAL DICE + 25        0
```

```
14- YARBOROUGH  FREE TURN    TOTAL DICE            16
15- KISMET      5 OF A KIND TOTAL DICE + 50        0

TOTAL GAME TOTAL                                   57


PLAYER 1 'S TURN.

DICE  1 IS A 1 BLACK
DICE  2 IS A 5 RED
DICE  3 IS A 3 GREEN
DICE  4 IS A 2 RED
DICE  5 IS A 1 BLACK

HOW MANY TO REPLACE?  (0 TO STOP)?
```

Program listing

KISMET

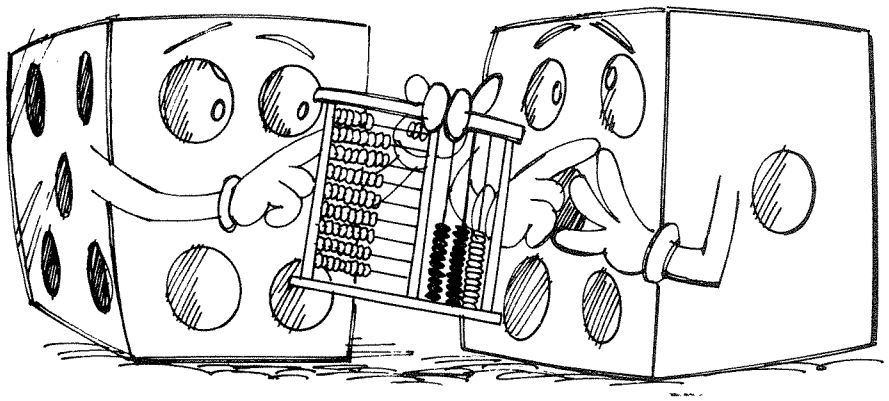
```
100 DIM B(3,17),X(6),D(5)
110 CLS
120 PRINT "THIS IS THE GAME OF KISMET.":PRINT
130 PRINT "HOW MANY WISH TO PLAY";:INPUT P9
140 IF P9<1 THEN 150 ELSE IF P9<4 THEN 160
150 PRINT "NO MORE THAN 3 ALLOWED.":GOTO 130
160 FOR I=1 TO 3:FOR X=1 TO 17:B(I,X)=0:NEXT X:NEXT I
170 GOSUB 1090
180 GOTO 760
190 IF I=1 THEN PRINT "1 - ACE",,"1 FOR EACH ACE";:RETURN
200 IF I=2 THEN PRINT "2 - DEUCES",,"2 FOR EACH DEUCE";:RETURN
210 IF I=3 THEN PRINT "3 - TREYS",,"3 FOR EACH TREY";:RETURN
220 IF I=4 THEN PRINT "4 - FOURS",,"4 FOR EACH FOUR";:RETURN
230 IF I=5 THEN PRINT "5 - FIVE",,"5 FOR EACH FIVE";:RETURN
240 IF I=6 THEN PRINT "6 - SIX",,"6 FOR EACH SIX";:RETURN
250 IF I=7 THEN PRINT "7 - 2 PAIR","  SAME COLOR","TOTAL DICE";:RETURN
260 IF I=8 THEN PRINT "8 - 3 OF A KIND","TOTAL DICE";:RETURN
270 IF I=9 THEN PRINT "9 - STRAIGHT",,"30 POINTS";:RETURN
280 IF I=10 THEN PRINT "10 - FLUSH","  SAME COLOR","35 POINTS";:RETURN
290 IF I=11 THEN PRINT "11 - FULL HOUSE",,"TOTAL DICE + 15";:RETURN
300 IF I=12 THEN PRINT "12 - FULL HOUSE","  SAME COLOR","TOTAL DICE + 20";:RETURN

310 IF I=13 THEN PRINT "13 - 4 OF A KIND","TOTAL DICE + 25";:RETURN
320 IF I=14 THEN PRINT "14 - YARBOROUGH","  FREE TURN","TOTAL DICE";:RETURN
350 PRINT "15 - KISMET","  5 OF A KIND"," TOTAL DICE + 50";:RETURN
360 FOR Q=1 TO 6:X(Q)=0:NEXT Q:P=0:E=0
370 FOR Q=1 TO 5:X(D(Q))=X(D(Q))+1:NEXT Q:Q=1
380 IF X>6 THEN400 ELSE IF X(X)=0 THEN 390 ELSE P=P+X(X)*X:RETURN
390 E=1:P=0:RETURN
400 FOR Q=1 TO 6:P=P+X(Q)*Q:NEXT Q
410 IF X=14 RETURN
420 Q=1:IF X<>9 THEN 460
430 IF X=1 THEN Q=Q+1:IF Q=E+5 THEN 450 ELSE 430
440 IF E=1 THEN 390 ELSE E=1:Q=2:GOTO 430
450 E=0:P=30:RETURN
460 IF X(Q)=5 THEN 470 ELSE Q=Q+1:IF Q=7 THEN 510 ELSE 460
470 IF X=7 THEN 700 ELSE IF X<>10 THEN 480 ELSE P=35:RETURN
480 IF X=11 THEN P=P+15:RETURN
```

```
490 IF X=12 THEN P=P+20:RETURN
500 IF X=15 THEN P=P+50:RETURN
510 IF X=15 THEN 390 ELSE Q=1:IF X()13 THEN 540
520 IF X(Q))=4 THEN 530 ELSE Q=Q+1:IF Q=7 THEN 390 ELSE 520
530 P=P+25:RETURN
540 IF X()10 THEN 580 ELSE Q=1
550 IF X(Q)=0 THEN Q=Q+1:GOTO 550
560 IF Q)3 THEN 390 ELSE IF X(7-Q)+X(Q)()5 THEN 390
570 P=35:RETURN
580 IF X()8 THEN 600 ELSE Q=1
590 IF X(Q))=3 THEN 700 ELSE Q=Q+1:IF Q=7 THEN 390 ELSE 590
600 Q=1:IF X()7 THEN 640
610 IF X(Q))=2 THEN 620 ELSE Q=Q+1:IF Q=7 THEN 390 ELSE 610
620 IF X(Q)=4 THEN 700 ELSE IF X(Q)+X(7-Q)(4 THEN 390
630 IF X(7-Q)=1 THEN 390 ELSE 700
640 IF X(Q))=2 THEN 650 ELSE Q=Q+1:IF Q=7 THEN 390 ELSE 640
650 IF X(Q))3,THEN 390 ELSE IF X()12 THEN 670
660 IF X(Q)+X(7-Q)()5 THEN 390 ELSE P=P+20:RETURN
670 Y=Q
680 Q=Q+1:IF Q=7 THEN 390 ELSE IF X(Q))=2 THEN 690 ELSE 680
690 IF X(Q)+X(Y)()5 THEN 390 ELSE P=P+15:RETURN
700 E=0:RETURN
710 PRINT D;:IF D=1 THEN 750 ELSE IF D=6 THEN 750
720 IF D=2 THEN 740 ELSE IF D=5 THEN 740
730 PRINT "GREEN":RETURN
740 PRINT "RED":RETURN
750 PRINT "BLACK":RETURN
760 FOR R9=1 TO 15:FOR P6=1 TO P9
770 CLS:PRINT "PLAYER";P6;"'S TURN.":PRINT
780 FOR J3=1 TO 5:D=INT(6*RND(0))+1
790 PRINT "DICE ";J3;"IS A";:GOSUB 710
800 D(J3)=D:NEXT J3:K4=0
810 PRINT:PRINT "HOW MANY TO REPLACE? (0 TO STOP)";
820 INPUT A:IF A=0 THEN 900
830 FOR J3=1 TO A:PRINT "ENTER DICE NUMBER";
840 INPUT U2:D=INT(6*RND(0))+1
850 D(U2)=D:NEXT J3:CLS
860 PRINT "YOUR DICE LOOK LIKE THIS :":PRINT
870 FOR J3=1 TO 5:PRINT "DICE ";J3;" ";
880 D=D(J3):GOSUB 710:NEXT J3
890 K4=K4+1:IF K4()2 THEN 810
900 D=0:FOR J3=1 TO 5:D=D+D(J3):NEXT J3
910 PRINT:PRINT "YOUR DICE TOTAL ";D
920 K4=0:FOR X=1 TO 15:P=0:IF B(P6,X)()0 THEN 930 ELSE GOSUB 360
930 K4=K4+P:NEXT X:IF K4()0 THEN 950
940 IF K4(2 THEN 810 ELSE PRINT "NO LOCATIONS MUST INSERT A ZERO."
950 PRINT "ENTER THE LOCATION NUMBER";:INPUT A
960 IF B(P6,A)=0 THEN 980
970 PRINT "ILLEGAL LOCATION.":GOTO 950
980 X=A:GOSUB 360
990 IF P=0 THEN P=-1:E=0
1000 IF E=1 THEN 970 ELSE B(P6,A)=P
1010 PRINT
1020 I=A:GOSUB 190:PRINT TAB(50);
1030 IF P=-1 THEN PRINT "ZERO":GOTO 1050
1040 PRINT P
1050 GOSUB 1090
1060 NEXT P6
1070 NEXT R9
1080 GOTO 1330
1090 PRINT:PRINT "DO YOU WANT A TABLE? (Y=YES)";
1100 INPUT A$:IF A$="Y" THEN 1110 ELSE RETURN
1110 FOR P=1 TO P9
1115 CLS
1120 PRINT
1130 PRINT "PLAYER ";P:PRINT
1140 M=0
```

```
1150 FOR I=1 TO 15:GOSUB 190
1160 IF B(P,I)=-1 THEN PRINT TAB(50);"ZERO":GOTO 1190
1170 PRINT TAB(50);B(P,I)
1180 M=M+B(P,I)
1190 IF I()6 THEN 1290
1200 IF M(63 THEN 1230 ELSE B=35
1210 IF M(71 THEN 1230 ELSE B=B+20
1220 IF M(78 THEN 1230 ELSE B=B+20
1230 IF B=0 THEN 1270
1240 PRINT
1250 PRINT "BONUS POINTS ";TAB(50);B
1260 M=M+B
1270 PRINT:PRINT "TOTAL BASIC SECTION";TAB(50);M
1280 PRINT:PRINT "HIT -ENTER- TO CONTINUE...";:INPUT W
1285 CLS
1290 NEXT I
1300 PRINT:PRINT "TOTAL GAME TOTAL";TAB(50);M
1305 PRINT "HIT -ENTER- TO CONTINUE...";:INPUT W
1310 PRINT:NEXT P
1320 RETURN
1330 END
```

NOTONE

a dice game



Description

The object of this game is to throw a pair of dice, adding the totals as you go along. There are 10 rounds per game. The player with the most points after 10 rounds wins the game. If at any time in a round when a player throws the dice, the total equals the total of the first thrown dice in that particular round, then the player loses all the accumulated points for that round. The player can stop throwing the dice at *any* time.

Note

By looking over the probability table you can see that getting a 7 on the first throw of a round is less advantageous than a 2 or 12. The player can use the table strategically to try and win the game.

Variable list

C = Total points for computer in the round
C1 = Total points for computer in the game
D = Total of two dice
D1 = Quantity of die one
D2 = Quantity of die two
F = Quantity of dice in first throw
I = Round number (up to 10)
P = Total points for player in the round
P1 = Total points for player in the game
R = Roll number

S = Total points for each round

T = Total number of tries the computer should throw dice for current round based upon the first number thrown

Z = Total number of points the computer should aim for in current round based upon first throw

Notone probability table

Total of dice	*Combinations*	*Probability*	*%*
2	1 + 1	1/36	2.77
3	1 + 2 2 + 1	2/36	5.55
4	1 + 3 3 + 1 2 + 2	3/36	8.33
5	1 + 4 4 + 1 3 + 2 2 + 3	4/36	11.11
6	1 + 5 5 + 1 4 + 2 2 + 4 3 + 3	5/36	13.88
7	1 + 6 6 + 1 5 + 2 2 + 5 3 + 4 4 + 3	6/36	16.66
8	2 + 6 6 + 2 5 + 3 3 + 5 4 + 4	5/36	13.88
9	3 + 6 6 + 3 5 + 4 4 + 5	4/36	11.11
10	4 + 6 6 + 4 5 + 5	3/36	8.33
11	5 + 6 6 + 5	2/36	5.55
12	6 + 6	1/36	2.77

Sample run

```
                              NOTONE

DO YOU WANT THE INSTRUCTIONS? (1=YES)?1

THIS IS A GAME OF NOTONE.  THE OBJECT OF THE GAME IS
THROW A PAIR OF DICE, ADDING THE TOTALS AS YOU GO ALONG.
IF AT ANY TIME WHILE THROWING THE DICE, THE TOTAL
EQUALS THE TOTAL OF THE FIRST THROWN DICE, THEN YOU LOSE
ALL THE ACCUMULATED POINTS FOR THAT ROUND.  YOU CAN STOP
THROWING THE DICE ANY TIME YOU WANT.  THERE ARE 10 ROUNDS
PER GAME.   ***** GOOD LUCK *****   (I'M PRETTY GOOD!)

YOU GO FIRST.


               ROUND 1

YOUR TURN.

ROLL 1 IS A 1 AND 2
(0)STOP OR (1)ROLL?1
ROLL 2 IS A 5 AND 2
(0)STOP OR (1)ROLL?1
ROLL 3 IS A 2 AND 5
(0)STOP OR (1)ROLL?1
ROLL 4 IS A 5 AND 6
(0)STOP OR (1)ROLL?1
ROLL 5 IS A 6 AND 2
(0)STOP OR (1)ROLL?1
ROLL 6 IS A 4 AND 2
(0)STOP OR (1)ROLL?1
ROLL 7 IS A 1 AND 4
(0)STOP OR (1)ROLL?1
ROLL 8 IS A 4 AND 5
(0)STOP OR (1)ROLL?1
ROLL 9 IS A 2 AND 6
(0)STOP OR (1)ROLL?1
ROLL 10 IS A 5 AND 4
(0)STOP OR (1)ROLL?1
ROLL 11 IS A 5 AND 4
(0)STOP OR (1)ROLL?1
ROLL 12 IS A 2 AND 3
(0)STOP OR (1)ROLL?1
ROLL 13 IS A 3 AND 3
(0)STOP OR (1)ROLL?1
ROLL 14 IS A 6 AND 3
(0)STOP OR (1)ROLL?0

YOU RECEIVED 102 POINTS IN THAT ROUND.

MY TURN.

ROLL 1 IS A 5 AND 6
ROLL 2 IS A 4 AND 5
ROLL 3 IS A 6 AND 2
ROLL 4 IS A 4 AND 3
ROLL 5 IS A 3 AND 6
ROLL 6 IS A 2 AND 1
ROLL 7 IS A 6 AND 6
ROLL 8 IS A 5 AND 4
ROLL 9 IS A 4 AND 5
ROLL 10 IS A 2 AND 3
ROLL 11 IS A 3 AND 1
ROLL 12 IS A 2 AND 6
```

```
ROLL 13 IS A 4 AND 5
ROLL 14 IS A 3 AND 2
ROLL 15 IS A 6 AND 4

I RECEIVED 118 POINTS IN THAT ROUND.


SCORE AT THE END OF ROUND 1
YOU        102
COMPUTER   118

               ROUND 2

YOUR TURN.

ROLL 1 IS A 3 AND 3
(0)STOP OR (1)ROLL?1
ROLL 2 IS A 4 AND 5
(0)STOP OR (1)ROLL?1
ROLL 3 IS A 2 AND 2
(0)STOP OR (1)ROLL?1
ROLL 4 IS A 2 AND 5
(0)STOP OR (1)ROLL?0

YOU RECEIVED 26 POINTS IN THAT ROUND.

MY TURN.

ROLL 1 IS A 1 AND 1
ROLL 2 IS A 4 AND 1
ROLL 3 IS A 4 AND 5
ROLL 4 IS A 5 AND 6
ROLL 5 IS A 4 AND 6
ROLL 6 IS A 3 AND 6
ROLL 7 IS A 4 AND 6
ROLL 8 IS A 5 AND 5
ROLL 9 IS A 5 AND 1
ROLL 10 IS A 1 AND 6
ROLL 11 IS A 6 AND 3
ROLL 12 IS A 1 AND 4
ROLL 13 IS A 2 AND 3
ROLL 14 IS A 4 AND 4
ROLL 15 IS A 2 AND 5

I RECEIVED 113 POINTS IN THAT ROUND.


SCORE AT THE END OF ROUND 2
YOU        128
COMPUTER   231

               ROUND 3

YOUR TURN.

ROLL 1 IS A 5 AND 6
(0)STOP OR (1)ROLL?1
ROLL 2 IS A 2 AND 4
(0)STOP OR (1)ROLL?1
ROLL 3 IS A 5 AND 1
(0)STOP OR (1)ROLL?1
ROLL 4 IS A 3 AND 4
(0)STOP OR (1)ROLL?1
ROLL 5 IS A 3 AND 6
(0)STOP OR (1)ROLL?1
ROLL 6 IS A 1 AND 5
(0)STOP OR (1)ROLL?1
```

```
ROLL 7 IS A 1 AND 2
(0)STOP OR (1)ROLL?1
ROLL 8 IS A 3 AND 3
(0)STOP OR (1)ROLL?1
ROLL 9 IS A 6 AND 5

YOU RECEIVED 0 POINTS IN THAT ROUND.

MY TURN.

ROLL 1 IS A 4 AND 2
ROLL 2 IS A 2 AND 1
ROLL 3 IS A 3 AND 3

I RECEIVED 0 POINTS IN THAT ROUND.


SCORE AT THE END OF ROUND 3
YOU        128
COMPUTER   231

               ROUND 4

YOUR TURN.

ROLL 1 IS A 1 AND 6
(0)STOP OR (1)ROLL?1
ROLL 2 IS A 2 AND 1
(0)STOP OR (1)ROLL?1
ROLL 3 IS A 2 AND 3
(0)STOP OR (1)ROLL?1
ROLL 4 IS A 4 AND 4
(0)STOP OR (1)ROLL?1
ROLL 5 IS A 1 AND 5
(0)STOP OR (1)ROLL?0

YOU RECEIVED 29 POINTS IN THAT ROUND.

MY TURN.

ROLL 1 IS A 5 AND 4
ROLL 2 IS A 5 AND 5
ROLL 3 IS A 2 AND 4
ROLL 4 IS A 3 AND 1
ROLL 5 IS A 6 AND 5
ROLL 6 IS A 5 AND 2
ROLL 7 IS A 1 AND 6
ROLL 8 IS A 3 AND 2

I RECEIVED 59 POINTS IN THAT ROUND.


SCORE AT THE END OF ROUND 4
YOU        157
COMPUTER   290

               ROUND 5

YOUR TURN.

ROLL 1 IS A 1 AND 2
(0)STOP OR (1)ROLL?1
ROLL 2 IS A 1 AND 1
(0)STOP OR (1)ROLL?1
ROLL 3 IS A 3 AND 1
(0)STOP OR (1)ROLL?1
ROLL 4 IS A 6 AND 2
```

```
(0)STOP OR (1)ROLL?1
ROLL 5 IS A 2 AND 5
(0)STOP OR (1)ROLL?1
ROLL 6 IS A 2 AND 5
(0)STOP OR (1)ROLL?1
ROLL 7 IS A 4 AND 1
(0)STOP OR (1)ROLL?1
ROLL 8 IS A 1 AND 3
(0)STOP OR (1)ROLL?1
ROLL 9 IS A 5 AND 2
(0)STOP OR (1)ROLL?1
ROLL 10 IS A 4 AND 6
(0)STOP OR (1)ROLL?1
ROLL 11 IS A 4 AND 3
(0)STOP OR (1)ROLL?1
ROLL 12 IS A 4 AND 4
(0)STOP OR (1)ROLL?1
ROLL 13 IS A 5 AND 2
(0)STOP OR (1)ROLL?1
ROLL 14 IS A 2 AND 1

YOU RECEIVED 0 POINTS IN THAT ROUND.

MY TURN.

ROLL 1 IS A 4 AND 6
ROLL 2 IS A 2 AND 3
ROLL 3 IS A 3 AND 1
ROLL 4 IS A 3 AND 6
ROLL 5 IS A 4 AND 1
ROLL 6 IS A 1 AND 2
ROLL 7 IS A 1 AND 6
ROLL 8 IS A 5 AND 6
ROLL 9 IS A 1 AND 2

I RECEIVED 57 POINTS IN THAT ROUND.


SCORE AT THE END OF ROUND 5
YOU        157
COMPUTER   347

               ROUND 6

YOUR TURN.

ROLL 1 IS A 3 AND 1
(0)STOP OR (1)ROLL?
```

Program listing

NOTONE

```
100 REM   J. VICTOR NAHIGIAN--10/05/76--VERSION 1
110 CLS:PRINT TAB(30);"NOTONE"
120 PRINT
130 PRINT "DO YOU WANT INSTRUCTIONS? (Y=YES)";
140 INPUT A$
```

```
150 IF A$="Y" THEN 160 ELSE 240
160 CLS
170 PRINT "THIS IS A GAME OF NOTONE. THE OBJECT OF THE GAME IS"
180 PRINT "TO THROW A PAIR OF DICE, ADDING THE TOTALS AS YOU GO ALONG."
190 PRINT "IF AT ANY TIME WHILE THROWING THE DICE, THE TOTAL"
200 PRINT "EQUALS THE TOTAL OF THE FIRST THROWN DICE, THEN YOU LOSE"
210 PRINT "ALL THE ACCUMULATED POINTS FOR THAT ROUND. YOU CAN STOP"
220 PRINT "THROWING THE DICE ANY TIME YOU WANT. THERE ARE 10 ROUNDS"
230 PRINT "PER GAME.    ***** GOOD LUCK *****  (I'M PRETTY GOOD!)"
240 P1=0:C1=0
250 P=0:C=0
260 PRINT:PRINT "YOU GO FIRST.":PRINT
270 FOR I=1 TO 10:PRINT
280 PRINT TAB(15);"ROUND"I
290 PRINT:PRINT "YOUR TURN.":PRINT
300 GOSUB 890:F=D:D=0
310 S=0
320 R=0
330 R=R+1
340 PRINT "ROLL"R"IS A"D1"AND"D2
350 IF D=F THEN 410
360 S=S+D1+D2
370 PRINT "(S)STOP OF (R)ROLL";:INPUT A$
380 IF A$="S" THEN 420
390 IF A$="R" THEN 400 ELSE 370
400 GOSUB 890:GOTO 330
410 S=0
420 P=P+S
430 CLS:PRINT "YOU RECEIVED"S"POINTS IN THAT ROUND."
440 PRINT:PRINT "MY TURN."
450 PRINT
460 GOSUB 890
470 F=D
480 S=0
490 R=0
500 D=0
510 T=18/(3-INT(ABS(F-7)/2))
520 Z=INT((((T*7)/6)-T)*36)
530 R=R+1
540 PRINT "ROLL"R"IS A"D1"AND"D2
545 FOR X=1TO 250:NEXT X
550 IF F=D THEN 640
560 S=S+D1+D2
570 IF I<>10 THEN 600
580 IF C+S>P THEN 650
590 GOTO 620
600 IF R>=T THEN 650
610 IF S>Z THEN 650
620 GOSUB 890
630 GOTO 530
640 S=0
650 CLS:PRINT "I RECEIVED"S"POINTS IN THAT ROUND."
660 C=C+S
670 PRINT:PRINT:PRINT "SCORED AT THE END OF ROUND"I
680 PRINT "YOU";TAB(10);P
690 PRINT "COMPUTER";TAB(10);C
700 NEXT I
710 PRINT
720 PRINT
730 IF C>P THEN 770 ELSE IF C=P THEN 760
740 PRINT "YOU WIN!":P1=P1+1
750 GOTO 780
760 PRINT "IT WAS A TIE!":GOTO 780
770 PRINT "I WON!":C1=C1+1:GOTO 780
780 PRINT:PRINT TAB(10);"GAME SCORES"
790 PRINT
800 PRINT "YOU";TAB(10);P1
```

```
810 PRINT "COMPUTER";TAB(10);C1
820 PRINT:PRINT "ANOTHER GAME? (Y=YES)";
830 INPUT A$:IF A$="Y" THEN 250
840 PRINT
850 IF P1)C1 THEN 870 ELSE IF P1=C1 THEN 880
860 PRINT "I WON THE GAMES BY"C1-P1:GOTO 920
870 PRINT "YOU WON THE GAME BY"P1-C1:GOTO 920
880 PRINT "IT WAS A TIE!":GOTO 920
890 D1=INT(6*RND(0))+1
900 D2=INT(6*RND(0))+1
910 D=D1+D2:RETURN
920 END
```

POEM

computer-created poems

Description

This program creates poems at random. The computer prints a different poem every time you run it. A noun-verb-adjective-adverb pattern is used in developing the poems.

Variable list

C = Group of cards to print (in multiple of fours)
C = 5, then start new line
C = 6, then print a semicolon (;)
C = 18, then poem has ended
I = Word number to print

Sample run

```
THIS PROGRAM MAKES RANDOM POEMS.

 SUNSHINE REMAINED OPENLY
 GENTLE RAGE SOARED; OUR BLOOD
 STARRY BEAUTY GROWS DOWN THIS
```

```
 HAPPINESS SHRANK SADLY
 RAGE GROWS
 ECSTASY RISES OUR
 RED YOUNG REMAINED SILENTLY
 BESMIRCH DIED
 IN US
 HOT

AGAIN?  (1=YES)?1


 IMAGINARY FALLS WITH US
 WISE ECSTASY FLOWED; HOT LOVE
 RED WONDER PLUNGED SOFTLY SILVER
 BEAUTY MARCHES DOWN
 DEATH SINKS
 RAGE SLEEPS BLESSED
 WISE ITS REMAINED TENDERLY
 WISE FLOWED
 MAGICALLY
 THIS

AGAIN?  (1=YES)?1


 LOVE SHONE OPENLY
 STARRY WONDER SOARED; RED BEAUTY
 INNOCENT JOY SHRANK WITH US COOL
 DEATH SHRANK TO SOON
 WAR FALLS
 HAPPINESS GROWS BLESSED
 THIS YOUNG FLOWED WILDLY
 MASKED FLOWED
 BRIGHTLY
 WISE

AGAIN?  (1=YES)?0
```

Program listing

```
POEM

100 PRINT:PRINT"THIS PROGRAM MAKES RANDOM POEMS.":PRINT:PRINT
110 REM NOUN-VERB-ADVERB PATTERN -- P. WHITE
120 READ C
130 DATA 3,2,0,5,1,3,2,6,1,3,5,1,3,2,0,1,5,3,2,0
```

```
140 DATA 5,3,2,5,3,2,1,5,1,1,2,0,5,1,2,5,0,5,1
150 DATA 18
160 IF C=18 THEN 260
170 IF C<>5 THEN 200
180 PRINT
190 GOTO 120
200 IF C<>6 THEN 230
210 PRINT ";";
220 GOTO 120
230 I=(INT(20*RND(0)+1)*4-C)
240 PRINT " ";::GOSUB 350
250 GOTO 120
260 PRINT
270 PRINT
280 PRINT
290 PRINT "AGAIN?  (1=YES)";
300 INPUT C
310 IF C=1 THEN 330
315 GOTO 340
320 PRINT
330 RESTORE:PRINT:PRINT:PRINT:PRINT:PRINT::GOTO 120
340 PRINT:PRINT:PRINT:PRINT::PRINT:STOP
350 IF I>1 THEN 360
355 PRINT"LIFE";:RETURN
360 IF I>2 THEN 370
365 PRINT "MARCHES";:RETURN
370 IF I>3 THEN 380
375 PRINT "MASKED";:RETURN
380 IF I>4 THEN 390
385 PRINT "GENTLY";:RETURN
390 IF I>5 THEN 400
395 PRINT "DEATH";:RETURN
400 IF I>6 THEN 410
405 PRINT "SHRANK";:RETURN
410 IF I>7 THEN 420
415 PRINT "LOOMING";:RETURN
420 IF I>8 THEN 430
425 PRINT "PEACEFULLY";:RETURN
430 IF I>9 THEN 440
435 PRINT "RAGE";:RETURN
440 IF I>10 THEN 450
445 PRINT "JUMPED";:RETURN
450 IF I>11 THEN 460
455 PRINT "SWEET";:RETURN
460 IF I>12 THEN 470
465 PRINT "BRIGHTLY";:RETURN
470 IF I>13 THEN 480
475 PRINT "JOY";:RETURN
480 IF I>14 THEN 490
485 PRINT "LAY";:RETURN
490 IF I>15 THEN 500
495 PRINT "BESMIRCH";:RETURN
500 IF I>16 THEN 510
505 PRINT "OPENLY";:RETURN
510 IF I>17 THEN 520
515 PRINT "FEAR";:RETURN
520 IF I>18 THEN 530
525 PRINT "RISES";:RETURN
530 IF I>19 THEN 540
535 PRINT "BLESSED";:RETURN
540 IF I>20 THEN 550
545 PRINT "DOWN";:RETURN
550 IF I>21 THEN 560
555 PRINT "JOY";:RETURN
560 IF I>22 THEN 570
565 PRINT "BURNS";:RETURN
570 IF I>23 THEN 580
```

```
575 PRINT "HOT";:RETURN
580 IF I)24 THEN 590
585 PRINT "FOR US";:RETURN
590 IF I)25 THEN 600
595 PRINT "ECSTASY";:RETURN
600 IF I)26 THEN 610
605 PRINT "DIED";:RETURN
610 IF I)27 THEN 620
615 PRINT "RED";:RETURN
620 IF I)28 THEN 630
625 PRINT "SADLY";:RETURN
630 IF I)29 THEN 640
635 PRINT "IMAGINARY";:RETURN
640 IF I)30 THEN 650
645 PRINT "SHONE";:RETURN
650 IF I)31 THEN 660
655 PRINT "OUR";:RETURN
660 IF I)32 THEN 670
665 PRINT "IN US";:RETURN
670 IF I)33 THEN 680
675 PRINT "LOVE";:RETURN
680 IF I)34 THEN 690
685 PRINT "SLEEPS";:RETURN
690 IF I)35 THEN 700
695 PRINT "GENTLE";:RETURN
700 IF I)36 THEN 710
705 PRINT "TENDERLY";:RETURN
710 IF I)37 THEN 720
715 PRINT "HATRED";:RETURN
720 IF I)38 THEN 730
725 PRINT "SINKS";:RETURN
730 IF I)39 THEN 740
735 PRINT "COOL";:RETURN
740 IF I)40 THEN 750
745 PRINT "SLOWLY";:RETURN
750 IF I)41 THEN 760
755 PRINT "BLOOD";:RETURN
760 IF I)42 THEN 770
765 PRINT "REMAINED";:RETURN
770 IF I)43 THEN 780
775 PRINT "CAPTIVE";:RETURN
780 IF I)44 THEN 790
785 PRINT "WILDLY";:RETURN
790 IF I)45 THEN 800
795 PRINT "HAPPINESS";:RETURN
800 IF I)46 THEN 810
805 PRINT "FLOWED";:RETURN
810 IF I)47 THEN 820
815 PRINT "NEW";:RETURN
820 IF I)48 THEN 830
825 PRINT "SOFTLY";:RETURN
830 IF I)49 THEN 840
835 PRINT "NIGHT";:RETURN
840 IF I)50 THEN 850
845 PRINT "SWELLED";:RETURN
850 IF I)51 THEN 860
855 PRINT "YOUNG";:RETURN
860 IF I)52 THEN 870
865 PRINT "SILENTLY";:RETURN
870 IF I)53 THEN 880
875 PRINT "SUNSHINE";:RETURN
880 IF I)54 THEN 890
885 PRINT "RUNS";:RETURN
890 IF I)55 THEN 900
895 PRINT "INNOCENT";:RETURN
900 I=I+4
```

```
910 IF I)60 THEN 920
915 PRINT "MAGICALLY";:RETURN
920 IF I)61 THEN 930
925 PRINT "PEACE";:RETURN
930 IF I)62 THEN 940
935 PRINT "GROWS";:RETURN
940 IF I)63 THEN 950
945 PRINT "WISE";:RETURN
950 IF I)64 THEN 960
955 PRINT "AGAIN";:RETURN
960 IF I)65 THEN 970
965 PRINT "BEAUTY";:RETURN
970 IF I)66 THEN 980
975 PRINT "SOARED";:RETURN
980 IF I)67 THEN 990
985 PRINT "STARRY";:RETURN
990 IF I)68 THEN 1000
995 PRINT "BRIEFLY";:RETURN
1000 IF I)69 THEN 1010
1005 PRINT "WAR";:RETURN
1010 IF I)70 THEN 1020
1015 PRINT "FALLS";:RETURN
1020 IF I)71 THEN 1030
1025 PRINT "SILVER";:RETURN
1030 IF I)72 THEN 1040
1035 PRINT "FOREVER";:RETURN
1040 IF I)73 THEN 1050
1045 PRINT "MOONLIGHT";:RETURN
1050 IF I)74 THEN 1060
1055 PRINT "PLUNGED";:RETURN
1060 IF I)75 THEN 1070
1065 PRINT "DIZZYING";:RETURN
1070 IF I)76 THEN 1080
1075 PRINT "WITH US";:RETURN
1080 IF I)77 THEN 1090
1085 PRINT "WONDER";:RETURN
1090 IF I)78 THEN 1100
1095 PRINT "ENDED";:RETURN
1100 IF I)79 THEN 1110
1105 PRINT "THIS";:RETURN
1110 IF I)80 THEN 1120
1115 PRINT "TOO SOON";:RETURN
1120 IF I)81 THEN 1130
1125 PRINT "FIRE";:RETURN
1130 IF I)82 THEN 1140
1135 PRINT "COMES";:RETURN
1140 IF I)83 THEN 1150
1145 PRINT "ITS";:RETURN
1150 PRINT "VIVIDLY";:RETURN
1160 END
```

POKER

game of draw poker

Description

In this game, you and the computer play draw poker against each other. You both have $100.00 to start the game. The cards are shuffled and your hand and the computer's hand are dealt. The computer deals you 5 cards, all face down. Upon completion of the deal the betting begins. You open with your first bid, betting according to what you have to start with in your hand. The computer and you both may discard 1 or more cards (but not more than 4) and receive new cards from the undealt portion of the card pack. This is the *draw*. You may *stand pat* and draw no cards if you wish.

After the draw there is another betting round, followed either by you or the computer *calling* for the other to show his hand.

Rank of cards

A (high), K, Q, J, 10, 9, 8, 7, 6, 5, 4, 3, 2, A (low). The Ace is low only in the sequence 5-4-3-2-A.

Rank of hands

1. *Royal flush*—an ace-high straight flush.
2. *Straight flush*—5 cards in the same suit, ranking consecutively.
3. *Four of a kind*—4 cards of the same rank.

4. *Full house*—3 cards of one rank and 2 cards of another rank.
5. *Flush*—5 cards of the same suit.
6. *Straight*—5 cards in 2 or more suits, ranking consecutively.
7. *Three of a kind*—3 cards of the same rank.
8. *Two pairs*—2 cards of one rank and 2 cards of another rank, with an unmatched fifth card.
9. *One pair*—2 cards of the same rank, with 3 unmatched cards.
10. *No pair*—loses to hand above it.

Draw poker probability table

Hand	*Number of combinations*	*Odds (hands)*
Royal flush	4	1 in 649,740
Straight flush	36	1 in 72,193
Four of a kind	624	1 in 4,165
Full house	3,744	1 in 694
Flush	5,108	1 in 509
Straight	10,200	1 in 255
Three of a kind	54,912	1 in 47
Two pairs	123,552	1 in 21
One pair	1,098,240	1 in 2

Variable list

A9 = Total amount in pool
B = Amount of money bid by player
B1 = Amount of money bid by computer
B9 = Dollar limit for computer before it decides to "go out"
C = Type of card
C1 = Rank of computer's hand
C2 = Computer's high card
C( ) = Type of card held by computer (by card number)
C1( ) = Suit of card held by computer (by card number)
C9( ) = Number of cards in hand of a particular suit
H8 = Number of cards computer will replace
H9 = High card in current hand
K9 = Number of cards player replaced
M( ) = Type of card held by player (by card number)
M1( ) = Suit of card held by player (by card number)
P1 = Rank of player's hand
P2 = Player's high card
P9 = Amount of money owned by player
S = Suit of card

S( ) = Cards picked from deck
T = Rank of current hand
T9 = Card number picked by player to replace
T( ) = Number of cards in hand of a particular kind

Sample run

```
POKER GAME.

ON BETTING, BET A ZERO TO CALL,
A NEGATIVE NUMBER TO GO OUT!


CARDS ARE RESHUFFLED.

ANTE OF $ 5.00
YOU HAVE $ 100


HERE IS YOUR HAND:

CARD 1 IS A  9  OF CLUBS
CARD 2 IS A  2  OF HEARTS
CARD 3 IS A  7  OF CLUBS
CARD 4 IS A ACE OF HEARTS
CARD 5 IS A JACK OF CLUBS

I'LL PICK MY HAND.

OPEN WITH A BET?10
I'LL ACCEPT.


HOW MANY CARDS TO REPLACE?3
CARD NUMBER?1
CARD NUMBER?2
CARD NUMBER?3

HERE IS YOUR HAND:

CARD 1 IS A  9  OF HEARTS
CARD 2 IS A  5  OF DIAMONDS
CARD 3 IS A KING OF SPADES
CARD 4 IS A ACE OF HEARTS
CARD 5 IS A JACK OF CLUBS

I'LL TAKE 3 CARDS.

HOW MUCH DO YOU BET?5

I RAISE $ 3
HOW MUCH DO YOU BET?0


I HAD ONE PAIR
WITH A HIGH CARD OF  8 .

YOU HAD NOTHING
WITH A HIGH CARD OF ACE.
```

```
I WON $ 23

AGAIN?  (1=YES)?1

CARDS ARE RESHUFFLED.

ANTE OF $ 5.00
YOU HAVE $ 77


HERE IS YOUR HAND:

CARD 1 IS A ACE OF SPADES
CARD 2 IS A  9  OF HEARTS
CARD 3 IS A JACK OF CLUBS
CARD 4 IS A  3  OF DIAMONDS
CARD 5 IS A  3  OF HEARTS

I'LL PICK MY HAND.

OPEN WITH A BET?5
I'LL ACCEPT.


HOW MANY CARDS TO REPLACE?3
CARD NUMBER?1
CARD NUMBER?2
CARD NUMBER?3

HERE IS YOUR HAND:

CARD 1 IS A  3  OF CLUBS
CARD 2 IS A  5  OF DIAMONDS
CARD 3 IS A  9  OF CLUBS
CARD 4 IS A  3  OF DIAMONDS
CARD 5 IS A  3  OF HEARTS

I'LL TAKE 3 CARDS.

HOW MUCH DO YOU BET?10

I RAISE $ 18
HOW MUCH DO YOU BET?5

I RAISE $ 12
HOW MUCH DO YOU BET?10

I RAISE $ 5
HOW MUCH DO YOU BET?10

I RAISE $ 9
HOW MUCH DO YOU BET?5

I RAISE $ 4
HOW MUCH DO YOU BET?10

I CALL!

I HAD NOTHING
WITH A HIGH CARD OF QUEEN.

YOU HAD THREE OF A KIND
WITH A HIGH CARD OF  3 .

YOU WON $ 108
```

```
AGAIN?  (1=YES)?0

YOU LEFT WINNING $ 185

READY.
```

Program listing

```
100 DIM T(13),C9(4),S(4,13),M(5),M1(5),C(5),C1(5)
110 CLS:PRINT "POKER GAME.":P9=100:PRINT
120 PRINT "ON BETTING, BET A ZERO TO CALL, "
130 PRINT "A NEGATIVE NUMBER TO GO OUT!":PRINT
140 FOR X=1 TO 4:FOR I=1 TO 13:S(X,I)=0:NEXT I:NEXT X:PRINT
150 PRINT "CARDS ARE RESHUFFLED."
160 A9=5:PRINT:PRINT "ANTE OF $5.00":PRINT "YOU HAVE $";P9:PRINT
165 PRINT:PRINT "HIT -ENTER- TO BEGIN...";:INPUT Z$:CLS
170 FOR X=1 TO 5:GOSUB 920:M(X)=C:M1(X)=S:NEXT X:GOSUB 1040
180 PRINT:PRINT "I'LL PICK MY HAND.":PRINT
190 FOR X=1 TO 5:GOSUB 920:C(X)=C:C1(X)=S:NEXT X
200 GOSUB 1080:C1=T:C2=H9:P1=-5
210 PRINT "OPEN WITH A BET";:INPUT B:IF B(0 THEN 210 ELSE IF RND(0)(.2 THEN 230
220 IF INT(((T*RND(0))+1)+((H9*RND(0))+1)+(T*10))(B-(B/10) THEN 440
230 A9=A9+B:PRINT "I'LL ACCEPT.":PRINT
240 PRINT:PRINT "HOW MANY CARDS TO REPLACE";:INPUT K9:IF K9=0 THEN 290
250 FOR X=1 TO K9
260 PRINT "CARD NUMBER";:INPUT T9:GOSUB 920
270 IF T9(6 THEN 280 ELSE PRINT "ENTER CARD NUMBER FROM 1 TO 5.":GOTO 260
280 M(T9)=C:M1(T9)=S:NEXT X:GOSUB 1040
290 GOSUB 1070:FOR X=1 TO 5:T(M(X))=T(M(X))+1:C9(M1(X))=C9(M1(X))+1
300 NEXT X:GOSUB 640:P1=T:GOSUB 800:P2=H9
310 PRINT:GOSUB 1080:H9=0:IF T)3 THEN 350
320 FOR Z=1 TO 5:IF H9=3 THEN 340 ELSE IF T(C(Z))()1 THEN 340 ELSE H9=H9+1
330 GOSUB 920:C(Z)=C:C1(Z)=S
340 NEXT Z
350 PRINT "I'LL TAKE";H9;"CARDS.":H8=H9
360 GOSUB 1080:C1=T:GOSUB 800:C2=H9
370 B9=INT((C1*RND(0))+(C2*RND(0))+(C1*10))+INT(A9/3)+((K9-H8)*2)+7
380 B1=0:PRINT:IF RND(0)(C1*.5 THEN 390 ELSE B9=99.99
390 PRINT "HOW MUCH DO YOU BET";:INPUT B
400 PRINT:IF B(0 THEN 570 ELSE A9=A9+B1
410 IF B=0 THEN GOSUB 480
415 GOTO 540
420 IF A9+B(B9 THEN 460 ELSE IF A9+B(B9+(B9/2) THEN 450
430 IF B9=99.99 THEN 450
440 PRINT "I'M OUT!":GOSUB 480:GOTO 580
450 PRINT "I CALL!":A9=A9+B:GOSUB 480:GOTO 540
460 B1=INT(((B9-A9)/3)*RND(0))+2:A9=A9+B
470 PRINT "I RAISE $";B1:GOTO 390
480 PRINT:PRINT "I HAD ";:T=C1:GOSUB 820
490 PRINT "WITH A HIGH CARD OF ";:C=C2:GOSUB 940:PRINT".":PRINT
500 IF P1=-5 THEN 530
510 PRINT "YOU HAD ";:T=P1:GOSUB 820
520 PRINT "WITH A HIGH CARD OF ";:C=P2:GOSUB 940:PRINT ".":PRINT
530 PRINT:RETURN
540 IF C1=P1 THEN 550 ELSE IF C1(P1 THEN 580 ELSE 570
550 IF C2=P2 THEN 560 ELSE IF C2(P2 THEN 580 ELSE 570
560 PRINT "IT WAS A TIE!!!":GOTO 590
570 PRINT "I WON $";A9:P9=P9-A9:GOTO 590
580 PRINT "YOU WON $";A9:P9=P9+A9
```

```
590 PRINT:PRINT "AGAIN? (Y=YES)";:INPUT B$:IF B$="Y" THEN 140
600 PRINT:IF P9<0 THEN 630
610 IF P9>=100 THEN 620 ELSE PRINT "YOU LEFT LOSING $";100-P9:GOTO 1100
620 PRINT "YOU LEFT WINNING $";P9:GOTO 1100
630 PRINT "YOU OWE ME $";-P9:GOTO 1100
640 T=0:FOR I=1 TO 4:IF C9(I)<>5 THEN 650 ELSE T=5
650 NEXT I:I=2:H9=0
660 I=I-1:IF I<>0 THEN 670 ELSE I=13
670 IF T(I)<1 THEN 660 ELSE H9=1:IF I<>1 THEN 680 ELSE I=14
680 Z=I-4
690 I=I-1:IF T(I)<>1 THEN 720
700 IF Z<>1 THEN 690
710 T=T+4:IF Z<>10 THEN 720 ELSE IF T=4 THEN 170 ELSE T=T+1
720 IF I=13 THEN 660 ELSE IF T<>5 THEN 730 ELSE IF T(1)<>1 THEN 730 ELSE H9=1
730 IF T=0 THEN 740 ELSE RETURN
740 FOR I=1 TO 13:IF T(I)<>4 THEN 750 ELSE T=7
750 IF T(I)<>3 THEN 760 ELSE T=T+5:H9=I
760 IF T(I)<>2 THEN 790 ELSE IF T=5 THEN 780 ELSE IF T<>0 THEN 770 ELSE H9=0
770 IF H9=1 THEN 780 ELSE IF H9>I THEN 780 ELSE H9=I
780 T=T+1
790 NEXT I:IF T<>5 THEN 810 ELSE T=3:RETURN
800 IF H9<>1 THEN 810 ELSE H9=14
810 RETURN
820 IF T=0 THEN PRINT "NOTHING":RETURN
830 IF T=1 THEN PRINT "ONE PAIR":RETURN
840 IF T=2 THEN PRINT "TWO PAIR":RETURN
850 IF T=3 THEN PRINT "THREE OF A KIND":RETURN
860 IF T=4 THEN PRINT "STRAIGHT":RETURN
870 IF T=5 THEN PRINT "FLUSH":RETURN
880 IF T=6 THEN PRINT "FULL HOUSE":RETURN
890 IF T=7 THEN PRINT "FOUR OF A KIND":RETURN
900 IF T=9 THEN PRINT "STRAIGHT FLUSH":RETURN
910 PRINT "ROYAL FLUSH!!":RETURN
920 S=INT(4*RND(0))+1:C=INT(13*RND(0))+1
930 IF S(S,C)=1 THEN 920 ELSE S(S,C)=1:RETURN
940 IF C=1 THEN PRINT "ACE";:RETURN
950 IF C=11 THEN PRINT "JACK";:RETURN
960 IF C=12 THEN PRINT "QUEEN";:RETURN
970 IF C=13 THEN PRINT "KING";:RETURN
980 IF C=14 THEN PRINT "ACE";:RETURN
990 PRINT C;:RETURN
1000 IF S=1 THEN PRINT " OF HEARTS":RETURN
1010 IF S=2 THEN PRINT " OF SPADES":RETURN
1020 IF S=3 THEN PRINT " OF DIAMONDS":RETURN
1030 PRINT " OF CLUBS":RETURN
1040 CLS:PRINT "HERE IS YOUR HAND:":PRINT:FOR X=1 TO 5
1050 C=M(X):S=M1(X):PRINT "CARD";X;"IS A ";:GOSUB 940:GOSUB 1000
1060 NEXT X:RETURN
1070 FOR X=1 TO 4:C9(X)=0:NEXT X:FOR X=1 TO 13:T(X)=0:NEXT X:RETURN
1080 GOSUB 1070:FOR X=1 TO 5:T(C(X))=T(C(X))+1
1090 C9(C1(X))=C9(C1(X))+1:NEXT X:GOSUB 640:RETURN
1100 END
```

PSYCHO

psychological test

Description

In this psychological game you take 5 tests. In each test the computer will draw a design. You are to take that design and draw a picture *using* the design in your picture. After you have drawn your picture, you will answer a question about what you drew. After the 5 patterns have been drawn, the computer will make a psychoanalysis of your personality.

The computer uses the technique commonly known in psychology as *projective* analysis. This testing technique is one method for describing inner personality characteristics such as levels of anxiety, tension, creativity, and self-confidence. The results of the test are based on predetermined constructs (statements) that were created through experimental testing of large samples of personalities.

Note

You should draw the picture before reading the question because the question may influence what you draw. In the enclosed sample run, answers were not entered so that your responses might not be influenced.

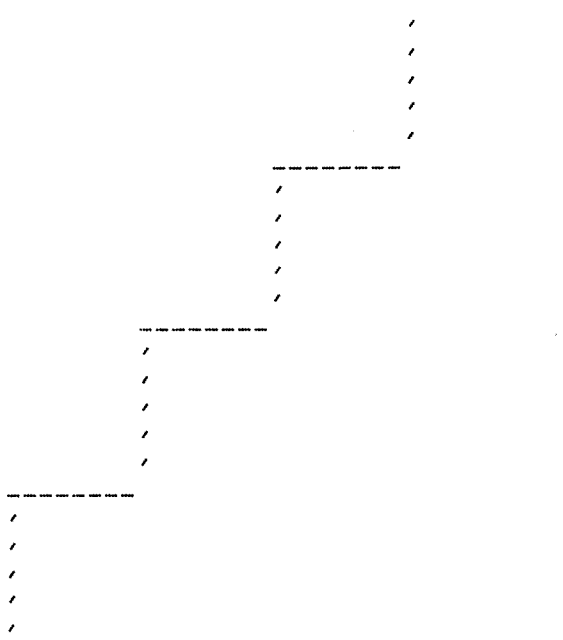
Variable list

A = Answer to Test #1
B = Answer to Test #2
C = Answer to Test #3
D = Answer to Test #4
E = Answer to Test #5

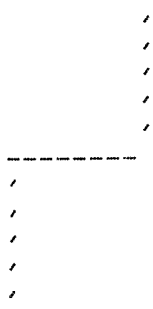
Sample run

```
THIS IS A PSYCHOLOGY TEST.

THERE ARE FIVE SHORT TESTS.  EACH TEST WILL BE SOME
DESIGN.  YOU ARE TO MAKE A PICTURE OUT OF THE DESIGN.
AFTER YOU DRAW THE PICTURE, YOU WILL ANSWER A QUESTION
ON WHAT YOU DREW.  AFTER THE FIVE TESTS ARE OVER,
THE COMPUTER WILL MAKE AN ANALYSIS OF YOU.


TEST #1

               X
              XXX
              XXX
               X

---------------------------------


THE DOT IN THE MIDDLE OF THE TEST BLOCK
REPRESENTS IN YOUR PICTURE...
(1)  THE CENTRAL SUBJECT.
(2)  THE RIGHT OR LEFT OF THE SUBJECT.
?0

TEST #2


**********************************
    X                           X
   X                             X
  X                               X
 X                                 X
X                                   X









X                                   X
 X                                 X
  X                               X
   X                             X
    X                           X
**********************************
```

```
IN YOUR PICTURE ARE THE FOUR CORNER LINES CONNECTED?
TYPE A 1 FOR YES, OR A 0 FOR NO?0

TEST #3
```



```
IN YOUR PICTURE DOES THE DESIGN REPRESENT STAIRS?
TYPE A 1 FOR YES, OR A 0 FOR NO?0

TEST #4
```



```
THE SUBJECT OF YOUR PICTURE IS...
(1)  AN ANIMAL OR PERSON          (2)  SOMETHING MECHANICAL
?0

TEST #5

                ,      ,
                ,      ,
                ,      ,
                ,      ,
                ,      ,
                ,      ,
                ,      ,
                ,      ,
                ,      ,
                ,      ,
                ,      ,
                ,      ,
                ,      ,
                ,      ,

HOW MANY TIMES IN YOUR PICTURE DID YOU DRAW A LINE WHICH
CROSSED BOTH PARALLEL LINES?0
```

Program listing

PSYCHO

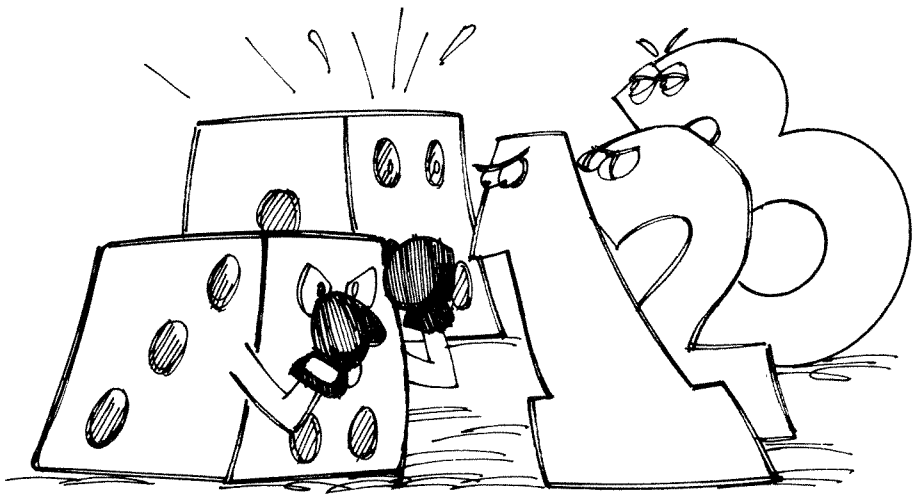
```
100 CLS
110 PRINT "THIS IS A PSYCHOLOGY TEST.":PRINT
120 PRINT "THERE ARE FIVE SHORT TESTS. EACH TEST WILL BE SOME"
130 PRINT "DESIGN. YOU ARE TO MAKE A PICTURE OUT OF THE DESIGN."
140 PRINT "AFTER YOU DRAW THE PICTURE, YOU  WILL ANSWER A QUESTION"
150 PRINT "ON WHAT YOU DREW. AFTER THE FIVE TESTS ARE OVER,"
160 PRINT "THE COMPUTER WILL MAKE AN ANALYSIS OF YOU.":PRINT:PRINT
170 PRINT "HIT -ENTER- TO BEGIN...";:INPUT Z$
175 CLS
180 PRINT "TEST #1":PRINT
190 PRINT TAB(15)"X":PRINT TAB(14)"XXX":PRINT TAB(14)"XXX"
200 PRINT TAB(15)"X":PRINT:PRINT:PRINT
210 PRINT "------------------------------"
230 PRINT:PRINT "THE DOT IN THE MIDDLE OF THE TEST BLOCK"
240 PRINT "REPRESENTS IN YOUR PICTURE...
250 PRINT "(1)  THE CENTRAL SUBJECT"
260 PRINT "(2)  THE RIGHT OR LEFT OF THE SUBJECT"
270 INPUT A:CLS:PRINT "TEST #2":PRINT
280 PRINT "   ************************************"
```

```
290 PRINT TAB(5)"X";TAB(35)"X"
300 PRINT TAB(4)"X";TAB(36)"X"
310 PRINT TAB(3)"X";TAB(37)"X"
320 PRINT TAB(2)"X";TAB(38)"X"
340 PRINT:PRINT
360 PRINT TAB(2)"X";TAB(38)"X"
370 PRINT TAB(3)"X";TAB(37)"X"
380 PRINT TAB(4)"X";TAB(36)"X"
390 PRINT TAB(5)"X";TAB(35)"X"
400 PRINT "   ************************************"
410 PRINT
420 PRINT "IN YOUR PICTURE ARE THE FOUR CORNERS CONNECTED?"
430 PRINT "Y OR N";:INPUT B$:IF B$="Y" THEN B=1 ELSE B=0
440 CLS:PRINT "TEST #3"
450 PRINT
460 FOR I=1 TO 2:PRINT TAB(45);"'":NEXT I
470 PRINT TAB(37);"--------"
480 FOR I=1 TO 2:PRINT TAB(37);"'":NEXT I
490 PRINT TAB(29);"--------"
500 FOR I=1 TO 2:PRINT TAB(29);"'":NEXT I
510 PRINT TAB(22);"--------"
520 FOR I=1 TO 2:PRINT TAB(21);"'":NEXT I:PRINT
540 PRINT "IN YOUR PICTURE DOES THE DESIGN REPRESENT STAIRS?"
550 PRINT "Y OR N";:INPUT C$:IF C$="Y" THEN C=1 ELSE C=0
560 CLS:PRINT "TEST #4":PRINT
580 FOR I=1 TO 5:PRINT TAB(45);"'":NEXT I
590 PRINT TAB(37);"--------"
600 FOR I=1 TO 5:PRINT TAB(37);"'":NEXT I:PRINT
620 PRINT "THE  SUBJECT OF YOUR PICTURE IS..."
630 PRINT "(1) AN ANIMAL OR PERSON"TAB(35)"(2) SOMETHING MECHANICAL";
640 INPUT D:CLS:PRINT "TEST #5"
650 PRINT
660 FOR I=1 TO 10:PRINT TAB(15);"'      '":NEXT I
670 PRINT
680 PRINT "HOW MANY TIMES IN YOUR PICTURE DID YOU DRAW A LINE WHICH"
690 PRINT "CROSSED BOTH PARALLEL LINES";:INPUT E:CLS
700 PRINT "TESTS COMPLETE."
710 FOR I=1 TO 500:NEXT I:CLS:PRINT TAB(20);"PSYCHO ANALYSIS":PRINT
720 IF A=1 THEN 750
730 PRINT "YOU ARE NOT SELF-CENTERED, AND HAVE A "
740 PRINT "GOOD SENSE OF DESIGN.":GOTO 760
750 PRINT "YOU ARE SELF-CENTERED, AND HAVE SELFISH TENDENCIES."
760 IF B=0 THEN 790
770 PRINT "YOU ENJOY PEOPLE'S COMPANY, AND ARE SOCIAL-MINDED."
780 GOTO 820
790 PRINT "YOU PREFER TO BE ALONE AT TIMES, AND ARE NOT A PARTY TYPE."
820 IF C=1 THEN 860
830 PRINT "YOU ARE A NON-CONFORMIST, AND ENJOY DOING THINGS"
840 PRINT "BECAUSE YOU LIKE THEM, NOT BECAUSE YOU ARE"
850 PRINT "INFLUENCED BY OTHERS.":GOTO 870
860 PRINT "YOU ARE A CONFORMIST, AND YOU FOLLOW THE CROWD."
870 PRINT
880 IF D=2 THEN 910
890 PRINT "YOU ARE NOT MECHANICAL-MINDED, BUT YOU ARE"
900 PRINT "CONCERNED FOR OTHER LIVING THINGS.":GOTO 930
910 PRINT "YOU ARE MECHANICAL MINDED, AND ENJOY WORKING"
920 PRINT "WITH INANIMATE OBJECTS."
930 PRINT
940 IF E<=3 THEN 970 ELSE IF E<=6 THEN 1000 ELSE IF E<=10 THEN 1030
950 PRINT "WOW!! YOUR SEX DRIVE IS VERY,VERY, STRONG!!!!!"
960 PRINT "THEY'D BETTER KEEP YOU IN A CAGE!":GOTO 1050
970 PRINT "YOU HAVE A VERY WEAK SEX DRIVE, AND YOU PROBABLY"
980 PRINT "DON'T ENJOY THE COMPANY OF MEMBERS OF THE OPPOSITE SEX."
990 GOTO 1050
1000 PRINT "YOUR SEX DRIVE IS MEDIUM LOW. YOU DON'T"
1010 PRINT "MIND BEING WITH MEMBERS OF THE OPPOSITE SEX,"
```

```
1020 PRINT "BUT YOU DON'T PREFER IT EITHER.":GOTO 1050
1030 PRINT "YOU HAVE A MEDIUM HIGH SEX DRIVE, AND YOU"
1040 PRINT "ENJOY BEING WITH MEMBERS OF THE OPPOSITE SEX."
1050 PRINT
1060 PRINT "THIS IS THE END OF YOUR PSYCHO-ANALYSIS."
1070 END
```

ROLL ON

a game of dice



Description

A different type of dice game is simulated in this program. The object of the game is to knock off the following numbers: 1 2 3 4 5 6 7 8 9. This is done by rolling a pair of dice and totaling them. You then take that total and knock off as many numbers as you can until your total reaches zero. You then throw the dice again. If you knock off all the numbers exactly, then you win. If you roll a number that has been already knocked off, you automatically lose!

Variable list

A( ) = Flag to see if number has been picked
A( ) = 0 Then number hasn't been picked
A( ) = 1 Then number has been picked
C = Number of locations left to knock off
E = Error flag to determine if any moves are left
I = Roll number
L = Number to knock off
W = Games won
W1 = Games lost

Sample run

```
THIS IS THE GAME OF ROLL ON.
DO YOU WANT THE INSTRUCTIONS?  (1 FOR YES)?1
```

```
THE OBJECT OF THE GAME IS TO KNOCK OF THE FOLLOWING NUMBERS:

1 2 3 4 5 6 7 8 9

THIS IS DONE BY ROLLING A PAIR OF DICE AND ADDING THE
TOTALS. YOU THEN TAKE THAT TOTAL AND KNOCK OFF AS MANY
NUMBERS AS YOU CAN UNTIL YOUR TOTAL REACHES ZERO.
YOU THEN THROW THE DICE AGAIN.  IF YOU KNOCK OFF
ALL THE NUMBERS THEN YOU WIN.  IF YOU DON'T KNOCK OFF
ALL THE NUMBERS EXACTLY, THEN YOU LOSE!


HERE IS ROLL 1

YOUR ROLL TOTALS 6
HERE IS THE BOARD:  1  2  3  4  5  6  7  8  9
WHAT NUMBER DO YOU WANT TO KNOCK OFF?5
YOUR ROLL TOTALS 1
HERE IS THE BOARD:  1  2  3  4  6  7  8  9
WHAT NUMBER DO YOU WANT TO KNOCK OFF?1

HERE IS ROLL 2

YOUR ROLL TOTALS 7
HERE IS THE BOARD:  2  3  4  6  7  8  9
WHAT NUMBER DO YOU WANT TO KNOCK OFF?4
YOUR ROLL TOTALS 3
HERE IS THE BOARD:  2  3  6  7  8  9
WHAT NUMBER DO YOU WANT TO KNOCK OFF?3

HERE IS ROLL 3

YOUR ROLL TOTALS 8
HERE IS THE BOARD:  2  6  7  8  9
WHAT NUMBER DO YOU WANT TO KNOCK OFF?6
YOUR ROLL TOTALS 2
HERE IS THE BOARD:  2  7  8  9
WHAT NUMBER DO YOU WANT TO KNOCK OFF?2

HERE IS ROLL 4

YOUR ROLL TOTALS 3
HERE IS THE BOARD:  7  8  9


TOO BAD, YOU LOSE ! !


ANOTHER TRY?  (1 FOR YES)?0


GAMES WON:  0
GAMES LOST:  1
```

Program listing

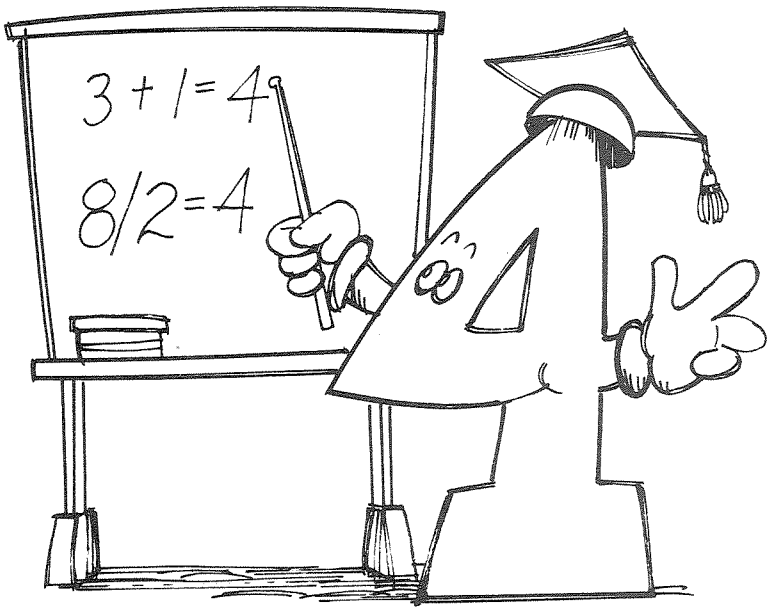
ROLLON

```
100 DIM A(9)
110 CLS
120 PRINT "THIS IS THE GAME OF ROLL ON.":PRINT
130 PRINT "DO YOU WANT INSTRUCTION?  (Y=YES)";
140 INPUT A$:CLS:IF A$="Y" THEN 150 ELSE 250
150 PRINT "THE OBJECT OF THIS GAME IS TO KNOCK OFF THE FOLLOWING NUMBERS:"
160 PRINT
170 PRINT "1 2 3 4 5 6 7 8 9":PRINT
180 PRINT "THIS IS DONE BY ROLLING A PAIR OF DICE AND ADDING THE"
190 PRINT "TOTALS. YOU THEN TAKE THAT TOTAL AND KNOCK OFF AS MANY"
200 PRINT "NUMBERS AS YOU CAN UNTIL YOUR TOTAL REACHES ZERO."
210 PRINT "YOU THEN THROW THE DICE AGAIN. IF YOU KNOCK OFF"
220 PRINT "ALL THE NUMBERS THEN YOU WIN. IF YOU DON'T KNOCK OFF"
230 PRINT "ALL THE NUMBERS EXACTLY, THEN YOU LOSE!"
240 PRINT
250 PRINT "HIT -ENTER- TO BEGIN...";:INPUT A
260 FOR I=1 TO 9:A(I)=0:NEXT I:I=0
270 CLS:I=I+1:PRINT "HERE IS ROLL"I:PRINT
280 X=INT(6*RND(0))+1:X=X+INT(6*RND(0))+1
290 PRINT "YOUR ROLL TOTALS"X
300 PRINT "HERE IS THE BOARD: ";
310 FOR L=1 TO 9:IF A(L)=1 THEN 320 ELSE PRINT L;
320 NEXT L:PRINT:IF X>9 THEN 330 ELSE IF A(X)=0 THEN 340
330 GOSUB 530:IF E=1 THEN 450
340 PRINT:PRINT "WHAT NUMBER DO YOU WANT TO KNOCK OFF";:INPUT L
350 IF A(L)<>1 THEN 370
360 PRINT "THAT NUMBERS BEEN USED.":GOTO 340
370 IF X>=L THEN 390
380 PRINT "THAT NUMBER IS LESS THAN YOUR TOTAL.":GOTO 340
390 C=0:X=X-L:A(L)=1
400 FOR L=1 TO 9:IF A(L)=0 THEN 410 ELSE C=C+1
410 NEXT L:IF C=9 THEN 420 ELSE IF X=0 THEN 270 ELSE 290
420 PRINT:PRINT
430 PRINT "***** CONGRATULATIONS, YOU WON *****"
440 PRINT:PRINT:W=W+1:GOTO 480
450 PRINT:PRINT
460 PRINT "TOO BAD, YOU LOSE!!!":PRINT
470 PRINT:W1=W1+1
480 PRINT "ANOTHER TRY?  (Y=YES)";:INPUT A$
490 IF A$="Y" THEN 250
500 CLS:PRINT "GAMES WON: ";W
510 PRINT "GAMES LOST: ";W1
520 GOTO 1220
530 E=0:IF X>2 THEN 550
540 E=1:RETURN
550 IF X<>3 THEN 570
560 IF A(2)=1 THEN 540 ELSE IF A(1)=1 THEN 540 ELSE RETURN
570 IF X<>4 THEN 590
580 IF A(3)=1 THEN 540 ELSE IF A(1)=1 THEN 540 ELSE RETURN
590 IF X<>5 THEN 620
600 IF A(3)=1 THEN 610 ELSE IF A(2)=1 THEN 610 ELSE RETURN
610 IF A(4)=1 THEN 540 ELSE IF A(1)=1 THEN 540 ELSE RETURN
620 IF X<>6 THEN 660
630 IF A(2)=1 THEN 650 ELSE IF A(4)=1 THEN 640 ELSE RETURN
640 IF A(3)=1 THEN 650 ELSE IF A(1)=1 THEN 650 ELSE RETURN
650 IF A(5)=1 THEN 540 ELSE IF A(1)=1 THEN 540 ELSE RETURN
660 IF X<>7 THEN 720
670 IF A(4)=1 THEN 700 ELSE IF A(2)=1 THEN 690
680 IF A(1)=1 THEN 690 ELSE RETURN
690 IF A(3)=1 THEN 700 ELSE RETURN
700 IF A(1)=1 THEN 710 ELSE IF A(6)=1 THEN 710 ELSE RETURN
710 IF A(5)=1 THEN 540 ELSE IF A(2)=1 THEN 540 ELSE RETURN
```

```
720 IF X()8 THEN 790
730 IF A(1)=1 THEN 770 ELSE IF A(2)=1 THEN 750
740 IF A(5)=1 THEN 750 ELSE RETURN
750 IF A(4)=1 THEN 760 ELSE IF A(3)=1 THEN 760 ELSE RETURN
760 IF A(7)=1 THEN 770 ELSE RETURN
770 IF A(2)=1 THEN 780 ELSE IF A(6)=1 THEN 780 ELSE RETURN
780 IF A(5)=1 THEN 540 ELSE IF A(3)=1 THEN 540 ELSE RETURN
790 IF X()9 THEN 890
800 IF A(1)=1 THEN 830 ELSE IF A(8)=11 THEN 810 ELSE RETURN
810 IF A(6)=1 THEN 820 ELSE IF A(2)=1 THEN 820 ELSE RETURN
820 IF A(3)=1 THEN 830 ELSE IF A(5)=1 THEN 840 ELSE RETURN
830 IF A(5)=1 THEN 840 ELSE IF A(4)=1 THEN 840 ELSE RETURN
840 IF A(3)=1 THEN 850 ELSE IF A(6)=1 THEN 850 ELSE RETURN
850 IF A(2)=1 THEN 540 ELSE IF A(7)=1 THEN 540 ELSE RETURN
860 IF X()10 THEN 950
870 IF A(1)=1 THEN 910 ELSE IF A(9)=1 THEN 880 ELSE RETURN
880 IF A(2)=1 THEN 890 ELSE IF A(7)=1 THEN 890 ELSE RETURN
890 IF A(3)=1 THEN 900 ELSE IF A(6)=1 THEN 900 ELSE RETURN
900 IF A(4)=1 THEN 910 ELSE IF A(5)=1 THEN 910 ELSE RETURN
910 IF A(3)=1 THEN 930 ELSE IF A(7)=1 THEN 920 ELSE RETURN
920 IF A(5)=1 THEN 930 ELSE IF A(2)=1 THEN 930 ELSE RETURN
930 IF A(4)=1 THEN 940 ELSE IF A(6)=1 THEN 940 ELSE RETURN
940 IF A(2)=1 THEN 540 ELSE IF A(8)=1 THEN 540 ELSE RETURN
950 IF X()11 THEN 1070
960 IF A(2)=1 THEN 1020 ELSE IF A(9)=1 THEN 970 ELSE RETURN
970 IF A(8)=1 THEN 980 ELSE IF A(1)=1 THEN 980 ELSE RETURN
980 IF A(3)=1 THEN 990 ELSE IF A(6)=1 THEN 990 ELSE RETURN
990 IF A(1)=1 THEN 1010 ELSE IF A(3)=1 THEN 1010
1000 IF A(5)=1 THEN 1010 ELSE RETURN
1010 IF A(5)=1 THEN 1020 ELSE IF A(4)=1 THEN 1020 ELSE RETURN
1020 IF A(7)=1 THEN 1050 ELSE IF A(3)=1 THEN 1040
1030 IF A(1)=1 THEN 1040 ELSE RETURN
1040 IF A(4)=1 THEN 1050 ELSE RETURN
1050 IF A(3)=1 THEN 1060 ELSE IF A(8)=1 THEN 1060 ELSE RETURN
1060 IF A(5)=1 THEN 540 ELSE IF A(6)=1 THEN 540 ELSE RETURN
1070 IF A(3)=1 THEN 1150 ELSE IF A(9)=1 THEN 1080 ELSE RETURN
1080 IF A(8)=1 THEN 1090 ELSE IF A(1)=1 THEN 1090 ELSE RETURN
1090 IF A(2)=1 THEN 1100 ELSE IF A(7)=1 THEN 1100 ELSE RETURN
1100 IF A(6)=1 THEN 1120 ELSE IF A(2)=1 THEN 1120
1110 IF A(1)=1 THEN 1120 ELSE RETURN
1120 IF A(6)=1 THEN 1140 ELSE IF A(2)=1 THEN 1140
1130 IF A(1)=1 THEN 1140 ELSE RETURN
1140 IF A(4)=1 THEN 1150 ELSE IF A(5)=1 THEN 1150 ELSE RETURN
1150 IF A(5)=1 THEN 1190 ELSE IF A(7)=1 THEN 1160 ELSE RETURN
1160 IF A(4)=1 THEN 1180 ELSE IF A(2)=1 THEN 1180
1170 IF A(1)=1 THEN 1180 ELSE RETURN
1180 IF A(6)=1 THEN 1190 ELSE IF A(1)=1 THEN 1190 ELSE RETURN
1190 IF A(9)=1 THEN 1210 ELSE IF A(1)=1 THEN 1210
1200 IF A(2)=1 THEN 1210 ELSE RETURN
1210 IF A(4)=1 THEN 540 ELSE IF A(8)=1 THEN 540 ELSE RETURN
1220 END
```

SKEEDOODLE

a game of numbers



Description

This is a fast and challenging game of numbers. To play, we select a single-digit scoring number between 2 and 9. Let's use 4 as an example. Then any number with a 4 in it (for example, 14, 24) would score a point. So would 31 and 28 because 3 + 1 = 4, and 8/2 = 4, and so on.

To begin the game you pick any number that is not a scoring number. The computer then obtains a new number by taking your old number and adding, subtracting, multiplying, or dividing the digits in any order. The computer can also double, square, square root, or halve the number.

The number 1 is wild, and when it appears as a move the next person may pick any number he wishes, even a scoring number. Entering a zero on your move gives the computer a point, and the computer then will tell you a move to make.

A number must be an integer never used before in the game you're playing. It also must be less than 10 times the scoring number. The last person to move gets a point.

Here is an explanation of how to play a sample game. The scoring number is nine.

6/2 = 3
3 ↑ 2 = 9 one point for scoring number 9
9 ↑ 2 = 81 two points for 1 + 8 = 9 [$\sqrt{81} = 9$]
8 × 1 = 8 multiplied by digits
8 ↑ 2 = 64 squared it
64/2 = 32 halved it

3 + 2 = 5 add digits
5 X 2 = 10 doubled it
10 X 2 = 20 doubled it
20 X 2 = 40 doubled it
40 X 2 = 80 doubled it
No moves left. Last person to move gets the final point.

Variable list

A = Number of the computation to perform
C( ) = A list of numbers picked
E = Error flag
E = 0 No error
E = 1 Error
L = Counter for numbers picked
N = Number picked
N1 = Previous move
N3 = Move for player
O = Ones position of current number
O1 = Ones position of previous number
P = Points for number by player
P1 = Points for number by computer
S = Scoring number
T = Tenth position of current number
T1 = Tenth position of previous number
X = Points for player
Y = Points for computer

Sample run

```
THIS IS A GAME OF SKEEDOODLE.

DO YOU WANT THE INSTRUCTIONS?  (1 FOR YES)?1

TO PLAY, WE SELECT A SINGLE-DIGIT SCORING NUMBER.  LET'S
USE 4 AS AN EXAMPLE.  THEN ANY NUMBER WITH A 4 IN IT
(IE. 14,24) WOULD SCORE A POINT.  SO WOULD 31 AND 28
BECAUSE 3+1=4, AND 8/2=4, AND SO ON.

TO BEGIN THE GAME YOU PICK ANY NUMBER THAT IS NOT A SCORING
NUMBER.  I THEN GET A NEW NUMBER BY TAKING YOUR OLD ONE
AND ADDING, SUBTRACTING, MULTIPLYING, OR DIVIDING THE DIGITS
IN ANY ORDER.  I CAN ALSO DOUBLE, SQUARE, SQUARE ROOT, OR
HALVE THE NUMBER.

THE NUMBER 1 IS WILD AND THE NEXT PERSON MAY PICK ANY NUMBER
HE WISHES, EVEN A SCORING NUMBER.  ENTERING A ZERO ON YOUR
MOVE GIVES THE COMPUTER A POINT AND IT WILL TELL YOU A MOVE
TO MAKE.
```

```
A NUMBER MUST BE AN INTEGER NEVER USED BEFORE IT THE GAME
YOUR PLAYING.  IT MUST ALSO BE LESS THAN TEN TIMES THE
SCORING NUMBER.  THE LAST PERSON TO MOVE GETS A POINT.

GIVE ME A SINGLE-DIGIT SCORING NUMBER?7

START OFF WITH THE FIRST NUMBER?13
MY MOVE IS 26
YOUR MOVE?3
MY MOVE IS 6
YOUR MOVE?12
MY MOVE IS 24
YOUR MOVE?2
MY MOVE IS 1
YOUR MOVE?49
 1 POINT(S) FOR YOU.
MY MOVE IS 7
 1 POINT(S) FOR ME.
YOUR MOVE?14
 1 POINT(S) FOR YOU.
MY MOVE IS 28
YOUR MOVE?4
MY MOVE IS 16
 1 POINT(S) FOR ME.
YOUR MOVE?8
MY MOVE IS 64
YOUR MOVE?10
MY MOVE IS 5
YOUR MOVE?25
 1 POINT(S) FOR YOU.
MY MOVE IS 50
NO MOVES LEFT.
A FINAL POINT FOR ME

A TIE!          3  3

ANOTHER GAME?  (1 FOR YES)?0
```

Program listing

SKEEDO

```
100 DIM C(50)
110 CLS:PRINT "THIS IS A GAME OF SKEEDOODLE.":PRINT
120 PRINT "DO YOU WANT INSTRUCTIONS?  (Y=YES)";:INPUT A$
130 CLS:IF A$="Y" THEN 1270
140 PRINT "GIVE ME A SINGLE-DIGIT SCORING NUMBER";:INPUT S
150 L=1:FOR I=1 TO 50:C(I)=0:NEXT I
160 X=0:Y=0
170 IF INT(S)<>S THEN 180 ELSE IF S<3 THEN 180 ELSE IF S<10  THEN 200
180 PRINT "THE SCORING NUMBER MUST BE FROM 3 TO 9."
190 PRINT:GOTO 140
200 PRINT:PRINT "START OFF WITH THE FIRST NUMBER";
210 INPUT N:GOSUB 1220:IF E=1 THEN 230
220 GOSUB 1080:IF P=0 THEN 250
230 PRINT "STARTING NUMBER CAN'T BE SCORING POINT AND"
240 PRINT "MUST BE AN INTEGER  BEWEEN 1 AND";S*10:GOTO 200
250 C(L)=N:L=L+1
```

```
260 N1=N:A=0:P1=0
270 IF N1<>1 THEN 310 ELSE N=N+1:IF N>S*10 THEN 290 ELSE GOSUB 1220
280 IF E=1 THEN 270 ELSE GOSUB 1080:IF P=0 THEN 270 ELSE P1=P:N2=N:GOTO 620
290 N=N-1:IF N=1 THEN 600 ELSE GOSUB 1220:IF E=1 THEN 290
300 GOSUB 1080:P1=0:N2=N:GOTO 620
310 T1=INT(N/10):O1=N-(T1*10)
320 N=T1+O1:GOSUB 1220:IF E=1 THEN 350
330 GOSUB 1080:IF P<P1 THEN 350 ELSE A=1:P1=P
340 N2=N
350 N=ABS(T1-O1):GOSUB 1220:IF E=1 THEN 380
360 GOSUB 1080:IF P<P1 THEN 380 ELSE A=2:P1=P
370 N2=N
380 N=T1*O1:GOSUB 1220:IF E=1 THEN 410
390 GOSUB 1080:IF P<P1 THEN 410 ELSE A=3:P1=P
400 N2=N
410 IF O1=0 THEN 440 ELSE IF N=T1/O1:GOSUB 1220:IF E=1 THEN 440
420 GOSUB 1080:IF P<P1 THEN 440 ELSE A=4:P1=P
430 N2=N
440 IF T1=0 THEN 470 ELSE N=O1/T1:GOSUB 1220:IF E=1 THEN 470
450 GOSUB 1080:IF P<P1 THEN 470 ELSE A=5:P1=P
460 N2=N
470 N=N1↑2:GOSUB 1220:IF E=1 THEN 500
480 GOSUB 1080:IF P<P1 THEN 500 ELSE A=6:P1=P
490 N2=N
500 N=2*N1:GOSUB 1220:IF E=1 THEN 530
510 GOSUB 1080:IF P<P1 THEN 530 ELSE A=7:P1=P
520 N2=N
530 N=SQR(N1):GOSUB 1220:IF E=1 THEN 560
540 GOSUB 1080:IF P<P1 THEN 560 ELSE A=8:P1=P
550 N2=N
560 N=N1/2:GOSUB 1220:IF E=1 THEN 590
570 GOSUB 1080:IF P<P1 THEN 590 ELSE A=9:P1=P
580 N2=N
590 IF A<>0 THEN 620
600 PRINT "NO MOVES LEFT."
610 PRINT "A FINAL POINT FOR YOU!":X=X+1:GOTO 980
620 N=N2:C(L)=N:L=L+1
630 PRINT "MY MOVE IS";N
640 IF P1=0 THEN 660 ELSE Y=Y+P1
650 PRINT P1;"POINT(S) FOR ME."
660 N1=N:T1=INT(N/10):O1=N-(T1*10)
670 N=T1+O1:GOSUB 1220:IF E<>1 THEN 790
680 N=ABS(T1-O1):GOSUB 1220:IF E<>1 THEN 790
690 N=T1*O1:GOSUB 1220:IF E<>1 THEN 790
700 IF O1=0 THEN 710 ELSE N=T1/O1:GOSUB 1220:IF E<>1 THEN 790
710 IF T1=0 THEN 720 ELSE N=O1/T1:GOSUB 1220:IF E<>1 THEN 790
720 N=N1↑2:GOSUB 1220:IF E<>1 THEN 790
730 N=2*N1:GOSUB 1220:IF E<>1 THEN 790
740 N=SQR(N1):GOSUB 1220:IF E<>1 THEN 790
750 N=N1/2:GOSUB 1220:IF E<>1 THEN 790
760 IF N1=1 THEN 790
770 PRINT "NO MOVES LEFT.":PRINT "A FINAL POINT FOR ME":Y=Y+1
780 GOTO 980
790 N3=N
800 PRINT "YOUR MOVE";:INPUT N:IF N<>0 THEN 820
810 PRINT "YOUR MOVE";N3:N=N3:Y=Y+1
820 GOSUB 1220:IF E=1 THEN 930 ELSE IF N2=1 THEN 940
830 T=INT(N2/10):O=N2-(T*10)
840 IF T+O=N THEN 940
850 IF ABS(T-O)=N THEN 940
860 IF O=0 THEN 870 ELSE IF T/O=N THEN 940
870 IF T=0 THEN 880 ELSE IF O/T=N THEN 940
880 IF T*O=N THEN 940
890 IF N2↑2=N THEN 940
900 IF 2*N2=N THEN 940
910 IF SQR(N2)=N THEN 940
920 IF N2/2=N THEN 940
```

```
930 PRINT "ILLEGAL MOVE.":GOTO 800
940 GOSUB 1080:IF P=0 THEN 970
950 PRINT P;"POINT(S) FOR YOU."
960 X=X+P
970 C(L)=N:L=L+1:GOTO 260
980 PRINT:IF Y>X THEN 1010
990 IF X=Y THEN 1030
1000 PRINT "YOU WON",X;Y:X1=X1+1:GOTO 1040
1010 PRINT "I WON",Y;X
1020 Y1=Y1+1:GOTO 1040
1030 PRINT "A TIE!",X;Y
1040 PRINT:PRINT "ANOTHER GAME? (Y=YES)";
1050 INPUT A$:CLS:IF A$="Y" THEN 140
1060 PRINT "TOTAL GAMES":PRINT
1070 PRINT "YOU";X1,"ME";Y1:PRINT:GOTO 1440
1080 T=INT(N/10):O=N-(T*10):P=0
1090 IF T=0 THEN 1190
1100 IF T+O<>S THEN 1110 ELSE P=P+1
1110 IF ABS(T-O)<>S THEN 1120 ELSE P=P+1
1120 IF T*O<>S THEN 1130 ELSE P=P+1
1130 IF O=0 THEN 1140 ELSE IF T/O<>S THEN 1140 ELSE P=P+1
1140 IF T=0 THEN 1150 ELSE IF O/T<>S THEN 1150 ELSE P=P+1
1150 IF N*N<>S THEN 1160 ELSE P=P+1
1160 IF 2*N<>S THEN 1170 ELSE P=P+1
1170 IF SQR(N)<>S THEN 1180 ELSE P=P+1
1180 IF N/2<>S THEN 1190 ELSE P=P+1
1190 IF T<>S THEN 1200 ELSE P=P+1
1200 IF O<>S THEN 1210 ELSE P=P+1
1210 RETURN
1220 E=0:FOR I=1 TO L:IF C(I)<>N THEN 1230 ELSE E=1
1230 NEXT I:IF N=INT(N) THEN 1240 ELSE E=1
1240 IF N>0 THEN 1250 ELSE E=1
1250 IF N<=S*10 THEN 1260 ELSE E=1
1260 RETURN
1270 PRINT "TO PLAY, WE SELECT A SINGLE-DIGIT SCORING NUMBER. LET'S"
1280 PRINT "USE 4 AS AN EXAMPLE. THEN ANY NUMBER WITH A 4 IN IT"
1290 PRINT "(IE. 14,24) WOULD SCORE A POINT. SO WOULD 31 AND 28"
1300 PRINT "BECAUSE 3+1=4, AND 8/2=4, AND SO ON.":PRINT
1310 PRINT "TO BEGIN THE GAME YOU PICK ANY NUMBER THAT IS NOT A SCORING"
1320 PRINT "NUMBER. I THEN GET A NEW NUMBER BY TAKING YOUR OLD ONE"
1330 PRINT "AND ADDING , SUBTRACTING, MULTIPLYING, OR DIVIDING THE DIGITS"
1340 PRINT "IN ANY ORDER. I CAN ALSO DOUBLE, SQUARE, SQUARE ROOT, OR"
1350 PRINT "HALVE THE NUMBER."
1360 PRINT:PRINT "HIT -ENTER- TO CONTINUE...";:INPUT A:CLS
1370 PRINT "THE NUMBER 1 IS WILD AND THE NEXT PERSON MAY PICK ANY NUMBER"
1380 PRINT "HE WISHES, EVEN A SCORING NUMBER. ENTERING A ZERO ON YOUR"
1390 PRINT "MOVE GIVES THE COMPUTER A POINT AND IT WILL TELL YOU A MOVE"
1400 PRINT "TO MAKE.":PRINT
1410 PRINT "A NUMBER MUST BE AN INTEGER  NEVER USED BEFORE IN THE GAME"
1420 PRINT "YOU'RE PLAYING. IT MUST ALSO BE LESS THAN TEN TIMES THE"
1430 PRINT "SCORING NUMBER. THE LAST PERSON TO MOVE GETS A POINT.":GOTO 140
1440 END
```

STAR TREK

battle game in space

Description

Imagine yourself on the S.S. Enterprise as Captain Kirk! This game simulates in striking detail a space battle using the characters from Gene Roddenberry's TV series. An attack by the Klingons on the Enterprise begins the action in the game. You are given 5 options to use during the battle. One of these options (3) is a status report. This report determines new angles to use when firing your weaponry.

To figure out the angle of attack use these formulas along with the status report:

Enterprise angle + Enterprise turn = new Enterprise angle
Klingon angle + Klingon turn = new Klingon angle

To determine the angle to shoot at, you take your angle (Enterprise) plus the Klingon's angle. It is important to determine new angles before every firing so that you can shoot the enemy down.

At every option, a new angle of movement is calculated. If either of you changes direction, you should get a status report to find out new angles of attack. Obviously, a turn of zero degrees will never change your current angle.

Distance is important only if you blow yourself up. Warps make no difference except that it affects the distance apart from the Klingons. Of course, when your life support reaches zero, you lose! Good hunting!

Variable list

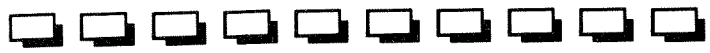
A1 = Angle of Enterprise
A2 = Angle of Klingons
A3 = Turn of Enterprise
A4 = Turn of Klingons
C = Random number generator variable
D = Distance of Enterprise to Klingons
H1 = Amount of damage done to shields of Klingons after a hit
H2 = Amount of damage done to shields of Enterprise after a hit
I1 = Impulse of Enterprise
I2 = Impulse of Klingons
L1 = Life support of Enterprise
L2 = Life support of Klingons
P1 = Warp drive of Enterprise
P2 = Warp drive of Klingons
Q1 = Warp speed of Enterprise
Q2 = Warp speed of Klingons
S1 = Shields of Enterprise
S2 = Shields of Klingons
W1 = Weaponry of Enterprise
W2 = Weaponry of Klingons
X = Distance being traveled by Klingons
Y = Distance being traveled by Enterprise

Sample run

```
THIS IS A STAR TREK GAME


1 - FIRE PHASERS
2 - FIRE PHOTON TORPEDOS
3 - STATUS REPORT
4 - CHANGE MOVEMENT
5 - SELF DESTRUCT

WHAT IS YOUR OPTION?3
    ***STATUS REPORT***
                ENTERPRISE      KLINGONS
SPEED (WARPS)        3               3
ANGLE               37            -143
TURN                 0               0
LIFE SUPPORT       100 %           100 %
WARP DRIVE         100 %           100 %
IMPULSE            100 %           100 %
SHIELDS            100 %           100 %
WEAPONRY           100 %           100 %
MR. SCOTT REPORTS KLINGONS AT 100000 K.M.

CHECKOV REPORTS KLINGONS HAVE CHANGED DIRECTION.
```

```
WHAT IS YOUR OPTION?2
WHAT ANGLE DO YOU WANT TO SHOOT AT?-106
SULU REPORT A MISS!


***WARNING***KLINGONS HAVE FIRED PHOTON TORPEDOS
SPOCK REPORTS YOU SUFFER FROM A DIRECT HIT!

WHAT IS YOUR OPTION?3
    ***STATUS REPORT***
              ENTERPRISE     KLINGONS
SPEED (WARPS)       3              3
ANGLE               17             3
TURN                0             -10
LIFE SUPPORT        100 %          100 %
WARP DRIVE          0 %            100 %
IMPULSE             100 %          100 %
SHIELDS             91 %           100 %
WEAPONRY            97 %           100 %
MR. SCOTT REPORTS KLINGONS AT 100048 K.M.


***WARNING***KLINGONS HAVE FIRED PHOTON TORPEDOS
SPOCK REPORTS YOU SUFFER FROM A DIRECT HIT!

WHAT IS YOUR OPTION?2
WHAT ANGLE DO YOU WANT TO SHOOT AT?24
MR. SULU REPORTS DIRECT HIT!!

***WARNING***KLINGONS HAVE FIRED PHASERS.
SENSORS SHOW KLINGONS SHOT WIDE!

WHAT IS YOUR OPTION?2
WHAT ANGLE DO YOU WANT TO SHOOT AT?0
***DIRECT HIT***

CHECKOV REPORTS KLINGONS HAVE CHANGED DIRECTION.

WHAT IS YOUR OPTION?3
    ***STATUS REPORT***
              ENTERPRISE     KLINGONS
SPEED (WARPS)       3              2
ANGLE               11             2
TURN                0              14
LIFE SUPPORT        100 %          100 %
WARP DRIVE          0 %            100 %
IMPULSE             100 %          100 %
SHIELDS             82 %           82 %
WEAPONRY            94 %           94 %
MR. SCOTT REPORTS KLINGONS AT 102604 K.M.

***WARNING***KLINGONS HAVE FIRED PHOTON TORPEDOS
**DIRECT HIT**

WHAT IS YOUR OPTION?2
WHAT ANGLE DO YOU WANT TO SHOOT AT?29
***DIRECT HIT***

CHECKOV REPORTS KLINGONS HAVE CHANGED DIRECTION.

WHAT IS YOUR OPTION?2
WHAT ANGLE DO YOU WANT TO SHOOT AT?61
SULU REPORT A MISS!

***WARNING***KLINGONS HAVE FIRED PHOTON TORPEDOS
SULU REPORTS A HIT ON THE ENTERPRISE!
```

```
WHAT IS YOUR OPTION?3
    ***STATUS REPORT***
                ENTERPRISE      KLINGONS
SPEED (WARPS)         3               2
ANGLE                 15              2
TURN                  0              -5
LIFE SUPPORT          100 %           100 %
WARP DRIVE            0 %             100 %
IMPULSE               100 %           100 %
SHIELDS               64 %            73 %
WEAPONRY              88 %            91 %
MR. SCOTT REPORTS KLINGONS AT 110128 K.M.

***WARNING***KLINGONS HAVE FIRED PHOTON TORPEDOS
SULU REPORTS A HIT ON THE ENTERPRISE!

WHAT IS YOUR OPTION?5
KLINGONS TOO FAR AWAY!!
YOU LOSE.  MR. SCOTT, SULU, CHECKOV, SPOCK, AND
UHURA REPORT THAT YOU ARE AN IDIOT!!

READY.
```



Program listing

STARTREK

```
100 K1=3.14169/180
110 Q1=3:Q2=3:D=100000:P1=100:P2=100:I1=100
120 A1=INT(180*RND(0))-90:A2=-(180-A1)
130 I2=100:L1=100:L2=100:S1=100:S2=100:W1=100:W2=100
140 CLS:PRINT "THIS IS A STAR TREK GAME":PRINT
150 PRINT "1 - FIRE PHASERS":PRINT "2 - FIRE PHOTON TORPEDOES"
160 PRINT "3 - STATUS REPORT":PRINT "4 - CHANGE MOVEMENT"
170 PRINT "5 - SELF DESTRUCT"
180 PRINT:PRINT "WHAT IS YOUR OPTION";:INPUT O9
190 ON O9 GOTO 220,310,460,570,600
200 PRINT "WHAT?":GOTO 180
210 IF A(1 THEN 180 ELSE ON A GOTO 220,310,,460
220 GOSUB 1060:IF ABS(A-A1))10 THEN 360 ELSE IF D)150000 THEN 420
230 C=INT(3*RND(0))+1:H1=2*INT((150000-D)/30000)
240 ON C GOTO 250,260,270
250 PRINT "PHASERS SCORE A DIRECT HIT!!! GOOD SHOOTING!":GOTO 620
260 PRINT "CHECKOV REPORTS A DIRECT HIT BY PHASERS!":GOTO 620
270 C=INT(3*INT(0))+1:ON C GOTO 280,290,300
280 PRINT "MR. SULU REPORTS DIRECT HIT!!!":GOTO 620
290 PRINT "*** DIRECT HIT ***":GOTO 620
300 PRINT "SPOCK REPORTS DIRECT HIT ON KLINGON SHIP!":GOTO 620
310 GOSUB 1060:IF ABS(A-A1))25 THEN 440 ELSE IF D)300000 THEN 430
320 C=INT(3*RND(0))+1:H1=INT((300000-D)/50000)
330 ON C GOTO 340,350,270
340 PRINT "PHOTON TORPEDOES SCORE DIRECT HIT!":GOTO 620
350 PRINT "SULU REPORTS DIRECT HIT BY PHOTON TORPEDOES":GOTO 620
360 C=INT(2*RND(0))+1:H1=0:ON C GOTO 370,380
370 PRINT "CHECKOV REPORTS CLEAN MISS BY PHASERS!":GOTO 620
380 C=INT(4*RND(0))+1:ON C GOTO 390,410,400
390 PRINT "YOUR SHOT IS WIDE!":GOTO 620
400 PRINT "SPOCK REPORTS A CLEAN MISS":GOTO 620
410 PRINT "SULU REPORTS A MISS":GOTO 620
420 PRINT "YOU ARE OUT OF PHASER RANGE":GOTO 620
```

```
430 PRINT "YOU ARE OUT OF PHOTON TORPEDO RANGE":GOTO 620
440 C=INT(3*RND(0))+1:H1=0:IF C=1 THEN 450 ELSE 380
450 PRINT "CHECKOV REPORTS A MISS BY PHOTON TORPEDOES!":GOTO 620
460 CLS:PRINT TAB(5)"*** STATUS REPORT ***"
470 PRINT TAB(15)"ENTERPRISE"TAB(30)"KLINGONS"
480 PRINT "SPEED (WARPS)"TAB(20)Q1TAB(35)Q2
490 PRINT "ANGLE"TAB(20)A1TAB(35)A2
500 PRINT "TURN"TAB(20)A3TAB(35)A4
510 PRINT "LIFE SUPPORT"TAB(20)L1"%"TAB(35)L2"%"
520 PRINT "WARP DRIVE"TAB(20)P1"%"TAB(35)P2"%"
530 PRINT "IMPULSE"TAB(20)I1"%"TAB(35)I2"%"
540 PRINT "SHIELDS"TAB(20)S1"%"TAB(35)S2"%"
550 PRINT "WEAPONRY"TAB(20)W1"%"TAB(35)W2"%"
560 PRINT "MR. SPOCK REPORTS KLINGONS AT"D"K.M.":GOTO 620
570 PRINT "WHAT ANGLE DO YOU WANT TO TURN";:INPUT A3:IF W2(ABS(A3) THEN 570
580 PRINT "WHAT WARP FACTOR DO YOU WANT TO MOVE TO";:INPUT Q1
590 IF Q1)INT (W1/10) THEN 580 ELSE 620
600 IF D(50000 THEN 610 ELSE PRINT "KLINGONS TOO FAR AWAY!!!":GOTO 990
610 PRINT "KLINGONS ARE DESTROYED BUT SO ARE YOU!":GOTO 1100
620 PRINT:C=INT(4*RND(0))+1:ON C GOTO 640,740,780,800
640 PRINT "*** WARNING *** KLINGONS HAVE FIRED PHASERS!"
650 IF D)200000 THEN 710 ELSE IF RND(0)).6 THEN 710
660 C=INT(100*RND(0))+1:IF C)W2 THEN 710 ELSE H2=INT(2*(150000-D)/30000)
670 C=INT(3*RND(0))+1:ON C GOTO 680,690,700
680 PRINT "** DIRECT HIT **":GOTO 820
690 PRINT "SPOCK REPORTS YOU SUFFER FROM A DIRECT HIT!":GOTO 820
700 PRINT "SULU REPORTS A HIT ON THE ENTERPRISE!":GOTO 820
710 C=INT(2*RND(0))+1:H2=0:ON C GOTO 720,730
720 PRINT "CHECKOV REPORTS A MISS.":GOTO 820
730 PRINT "SENSORS SHOW KLINGONS SHOT WIDE!":GOTO 820
740 PRINT "*** WARNING *** KLINGONS HAVE FIRED PHOTON TORPEDOES"
750 IF D)300000 THEN 710 ELSE IF RND(0)).85 THEN 710
760 C=INT(100*RND(0)):IF C)W2 THEN 710 ELSE H2=INT((300000-D)/50000)
770 GOTO 670
780 A4=INT((P2/2)*RND(0)-P2/4):Q2=INT((P2/10)*RND(0))
790 PRINT "CHECKOV REPORTS KLINGONS HAVE CHANGED DIRECTION.":GOTO 820
800 IF P2)30 THEN 620 ELSE PRINT "KLINGONS HAVE SELF DESTRUCTED!"
810 IF D)50000 THEN 1010 ELSE PRINT "YOU ARE ALSO DESTROYED!!!":GOTO 1100
820 A1=A1+A3+A4:Q=A1:GOSUB 1070:A1=Q:A2=A2+A3+A4:Q=Q2:GOSUB 1070
830 A2=Q:X=SQR(D+2+(Q2*5000)+2-(2*D*Q2*5000*COS(ABS(A2)*K1)))
840 Y=SQR(D+2+(Q1*5000)+2-(2*D*Q1*5000*COS(ABS(A2)*K1)))
850 D=INT((X+Y)/2)+15000:H1=H1*3:H2=H2*3:S1=S1-H2:S2=S2-H1
860 P1=P1-H2/3:P2=P2-H1/3:W1=W1-H2/3:W2=W2-H1/3
870 IF S1(0 THEN 880 ELSE IF S2(0 THEN 900 ELSE 920
880 PRINT "MR. SCOTT REPORTS SHIELDS ARE OUT!"
890 K4=1:W1=W1+S1:P1=P1+S1:I1=I1+S1:L1=L1+S1:S1=0:GOTO 950
900 P2=P2+S2:W2=W2+S2:L2=L2+S2:I2=I2+S2:S2=0
910 PRINT "CHECKOV REPORTS KLINGON SHIELDS ARE OUT!":GOTO 950
920 IF S1(25 THEN 930 ELSE IF S2(25 THEN 940 ELSE 950
930 PRINT "SCOTTY REPORTS NUMBER 4 & 6 SHIELDS HAVE BUCKLED!":GOTO 950
940 PRINT "SENSORS SHOW THAT KLINGONS SHIELDS ARE WEAK!"
950 H1=0:H2=0:IF L1(10 THEN 960 ELSE IF L2(10 THEN 1010 ELSE 1030
960 C=INT(3*RND(0))+1:ON C GOTO 970,980,990
970 PRINT "YOU HAVE BEEN DESTROYED. KLINGONS TAKE OVER!":GOTO 1100
980 PRINT "YOU HAVE BLOWN UP! YOU LOSE!": GOTO 1100
990 PRINT "YOU LOSE. MR. SCOTT, SULU, CHECKOV, SPOCK, AND"
1000 PRINT "UHURA REPORT THAT YOU ARE AN IDIOT!!!":GOTO 1100
1010 PRINT "KLINGONS ARE DEAD, YOU'VE SAVED THE GALAXY!":GOTO 1100
1020 PRINT "SULU REPORTS KLINGONS ARE DEAD! YOU WIN!":GOTO 1100
1030 IF L1(50 THEN 1040 ELSE IF L2(50 THEN 1050 ELSE 180
1040 PRINT "LT. UHURA REPORTS LIFE SUPPORT IS FAILING!":GOTO 180
1050 PRINT "SENSORS SHOW KLINGONS ARE ALMOST OUT OF POWER!":GOTO 180
1060 PRINT "WHAT ANGLE DO YOU WANT TO SHOOT AT";:INPUT A:RETURN
1070 IF A(-180 THEN 1080 ELSE IF Q)180 THEN 1090 ELSE RETURN
1080 A=A+360:GOTO 1070
1090 Q=Q-360:GOTO 1070
1100 END
```

STOCK

stock market game

Description

A game of playing the stock market is simulated by the computer in this program. A group of corporations are listed in a table or tabulation board and the player buys and sells stocks for a profit (or loss) from the corporations on the board. The object of the game is to make more money than your opponent.

Corporations are created every day to assure continuance of a business beyond the usually shorter period of time that a single proprietor or members of a partnership exist. A corporation can gather together and obtain far greater amounts of working capital than any single individual or a partnership.

A corporation is permitted to produce negotiable certificates allowing ready transfer of ownership and management. These certificates are commonly called *shares of stock*. Most shares of a corporation are created to provide funds for companies (corporations) to maintain continued expansion and production growth.

The method of buying and selling stock in this game is as follows. The player rolls 2 dice, die "A" and die "B." The player can either buy "A" shares of stock in company "B" or buy "B" shares of stock in company "A." The player can sell "A" and "B" company stocks the same way. Obviously, the player can't sell more shares of stock than he has. There is also a 5% brokerage fee on all money transactions.

In order to make the price of a stock go up or down the player must use his turn not to buy or sell, but to raise or lower the price of any stock. This is done by raising stock "A" by "B" dollars or by dropping stock "A" by "B" dollars. The player can also raise or lower stock "B" by "A" dollars.

Everyone starts the game with $50, and the game ends when a per-

son has $100 cash on hand. The computer is very "bullish," so all "bears" beware!

Note

Option 1 is used to buy or sell stocks and Option 2 is used to raise or lower the price of a stock. A negative number for shares is typed in for *selling* or *lowering* a particular stock.

Variable list

A( ) = Assets owned by each player
A9 = Average cost per share
C( ) = Dollars per share for each stock
C1 = Company number chosen by player
M( ) = Cash on hand for each player
O1 = Option number chosen by player
Q = Number of players in game
S( ) = Number of shares of each stock owned by the players
S1 = Number of shares chosen by player
T = Number of dollars each player begins the game with
T1 = Number of dollars needed to win game

Sample run

```
                    STOCK MARKET GAME


HOW MANY PLAYERS?2

DO YOU WISH FOR THE INSTRUCTIONS?  (1 FOR YES)?1


THIS IS A GAME OF STOCK MARKET.  THE OBJECT OF THIS
GAME IS TO MAKE MORE MONEY THAN YOUR OPPONENT.
THIS IS DONE BY BUYING AND SELLING STOCKS FOR A PROFIT.

THE WAY YOU BUY AND SELL STOCK IS AS FOLLOWS.  YOU ROLL TWO
DICE; SAY DICE A AND DICE B.  YOU CAN EITHER BUY 'A' SHARES
OF STOCK IN COMPANY 'B' OR BUY 'B' SHARES OF STOCK IN COMPANY 'A'.
THE SAME GOES FOR SELLING EXCEPT, OBVIOUSLY, YOU CAN'T SELL MORE
SHARES OF STOCK THAN YOU HAVE.  THERE IS ALSO A 5% BROKERAGE
FEE ON ALL MONEY TRANSACTIONS.

TO MAKE THE PRICE OF A STOCK GO UP OR DOWN REQUIRES THAT
YOU USE YOUR TURN, NOT TO BUY OR SELL, BUT TO RAISE OR LOWER
THE PRICE OF ANY STOCK.  THIS IS DONE BY RAISING 'A' STOCK
BY 'B' DOLLARS OR BY DROPPING 'A' STOCK BY 'B' DOLLARS.  IT
ALSO WORKS IN REVERSE; THAT IS YOU RAISE OR LOWER 'B' STOCK
BY 'A' DOLLARS.
```

```
OPTION 1 IS USED TO BUY OR SELL STOCKS WHILE
OPTION 2 IS USED TO RAISE OR LOWER THE PRICE OF A STOCK.
TO SELL OR LOWER A STOCK, TYPE IN A NEGATIVE NUMBER FOR SHARES.

EVERYONE STARTS THE GAME WITH 50 DOLLARS, AND THE GAME
ENDS WHEN A PERSON HAS 100 DOLLARS, CASH ON HAND.

GOOD LUCK ! ! ! !


    STOCK MARKET TABLE

---------STOCKS---------  **PLAYER 1*   **PLAYER 2*   **PLAYER 3*
NM STOCK NAME    $/SHARE  SHR   WORTH   SHR   WORTH   SHR   WORTH
 1 DIAMONDS INC.    1     0     0       0     0
 2 MINI-COMP        4     0     0       0     0
 3 MUTUAL MOTORS    3     0     0       0     0
 4 MEANCHILD ELEC.  6     0     0       0     0
 5 GRANDPA BELL     5     0     0       0     0
 6 BROKE FINANCE    5     0     0       0     0
                          ------------------------------------------
   TOTALS                 0     0       0     0
   CASH ON HAND             50            50
   TOTAL ASSETS TO DATE     50            50

AVERAGE COST PER SHARE $ 4  UP 4 DOLLARS PER SHARE.



IT IS PLAYER 1 'S TURN.

YOU ROLLED A  2  AND AN  4
ENTER OPTION, COMPANY, SHARES?1,2,4

IT IS PLAYER 2 'S TURN.

YOU ROLLED A  6  AND AN  6
ENTER OPTION, COMPANY, SHARES?1,6,6



    STOCK MARKET TABLE

---------STOCKS---------  **PLAYER 1*   **PLAYER 2*   **PLAYER 3*
NM STOCK NAME    $/SHARE  SHR   WORTH   SHR   WORTH   SHR   WORTH
 1 DIAMONDS INC.    1     0     0       0     0
 2 MINI-COMP        4     4     16      0     0
 3 MUTUAL MOTORS    3     0     0       0     0
 4 MEANCHILD ELEC.  6     0     0       0     0
 5 GRANDPA BELL     5     0     0       0     0
 6 BROKE FINANCE    5     0     0       6     30
                          ------------------------------------------
   TOTALS                 4     16      6     30
   CASH ON HAND             33.2          18.5
   TOTAL ASSETS TO DATE     49.2          48.5

AVERAGE COST PER SHARE $ 4  NO CHANGE.


DO YOU WISH TO CONTINUE?  (1 FOR YES)?1
```

```
IT IS PLAYER 1 'S TURN.

YOU ROLLED A  6  AND AN  4
ENTER OPTION, COMPANY, SHARES?2,6,-4
THE STOCK FOR COMPANY 6 NOW COSTS $ 1

IT IS PLAYER 2 'S TURN.

YOU ROLLED A  1  AND AN  4
ENTER OPTION, COMPANY, SHARES?1,1,4



    STOCK MARKET TABLE

---------STOCKS---------  **PLAYER 1*   **PLAYER 2*   **PLAYER 3*
NM STOCK NAME    $/SHARE  SHR   WORTH   SHR   WORTH   SHR   WORTH
 1 DIAMONDS INC.    1     0     0       4     4
 2 MINI-COMP        4     4     16      0     0
 3 MUTUAL MOTORS    3     0     0       0     0
 4 MEANCHILD ELEC.  6     0     0       0     0
 5 GRANDPA BELL     5     0     0       0     0
 6 BROKE FINANCE    1     0     0       6     6
                          ------------------------------------------
   TOTALS                 4     16      10    10
   CASH ON HAND               33.19         14.3
   TOTAL ASSETS TO DATE       49.19         24.3

AVERAGE COST PER SHARE $ 3.33  DOWN .67 DOLLARS PER SHARE.


DO YOU WISH TO CONTINUE?  (1 FOR YES)?1



IT IS PLAYER 1 'S TURN.

YOU ROLLED A  4  AND AN  2
ENTER OPTION, COMPANY, SHARES?1,2,4

IT IS PLAYER 2 'S TURN.

YOU ROLLED A  5  AND AN  6
ENTER OPTION, COMPANY, SHARES?2,6,5
THE STOCK FOR COMPANY 6 NOW COSTS $ 6



    STOCK MARKET TABLE

---------STOCKS---------  **PLAYER 1*   **PLAYER 2*   **PLAYER 3*
NM STOCK NAME    $/SHARE  SHR   WORTH   SHR   WORTH   SHR   WORTH
 1 DIAMONDS INC.    1     0     0       4     4
 2 MINI-COMP        4     8     32      0     0
 3 MUTUAL MOTORS    3     0     0       0     0
 4 MEANCHILD ELEC.  6     0     0       0     0
 5 GRANDPA BELL     5     0     0       0     0
 6 BROKE FINANCE    6     0     0       6     36
                          ------------------------------------------
   TOTALS                 8     32      10    40
   CASH ON HAND               16.39         14.3
   TOTAL ASSETS TO DATE       48.39         54.3
```

```
AVERAGE COST PER SHARE $ 4.16  UP .83 DOLLARS PER SHARE.

DO YOU WISH TO CONTINUE?  (1 FOR YES)?0

READY.
```

Program listing

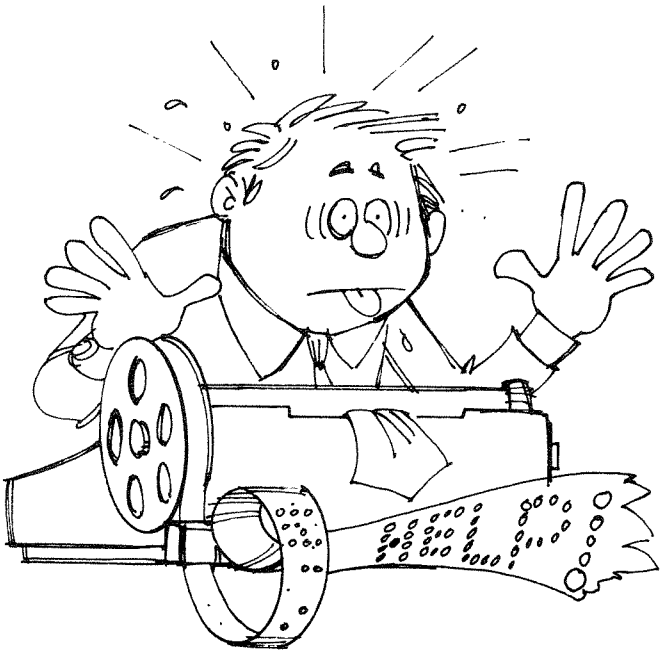
```
100 DIM C(6),S(3,6),M(3),A(3)
110 T=50:REM DOLLARS TO START GAME WITH
120 T1=100:REM DOLLARS FOR END OF GAME
130 CLS
140 PRINT TAB(30)"STOCK MARKET GAME":PRINT
160 FOR I=1 TO 3:M(I)=T:NEXT I
170 PRINT "HOW MANY PLAYERS";:INPUT Q:PRINT
180 IF Q<1 THEN 170 ELSE IF Q>3 THEN 170
190 FOR I=1 TO 6:C(I)=INT(6*RND(I))+1:NEXT I
200 PRINT "DO YOU WISH FOR THE INSTRUCTIONS? (Y=YES)";:INPUT A$
210 IF A$="Y" THEN GOSUB 1080
220 GOSUB 600
230 PRINT
240 PRINT:PRINT:FOR I=1 TO Q
250 PRINT "IT IS PLAYER"I"'S TURN.":PRINT
260 C=INT(6*RND(0))+1:S=INT(6*RND(0))+1
270 PRINT "YOU ROLLED A"C"AND AN"S
280 PRINT "ENTER OPTION, COMPANY, SHARES";:INPUT O1,C1,S1
290 IF C1=C THEN 300 ELSE IF C<>ABS (S1) THEN 280
300 IF S=ABS(S1) THEN 320 ELSE IF S<>C1 THEN 280
310 IF ABS(S1)>6 THEN 280
320 IF O1<>1 THEN 430 ELSE IF S1<0 THEN 380
330 C2=(S1*C(C1))+(.05*(S1*C(C1)))
340 IF M(I)>C2 THEN 360
350 PRINT "PERSON"I"DOESN'T HAVE ENOUGH MONEY.":GOTO 280
360 S(I,C1)=S(I,C1)+S1:M(I)=M(I)-C2
370 GOTO 490
380 IF S(I,C1)+S1)=0 THEN 400
390 PRINT "YOU DON'T HAVE THAT MANY SHARES -- TRY AGAIN.":GOTO 280
400 C2=(S1*C(C1))-(.05*(S1*C(C1)))
410 M(I)=M(I)+ABS(C2)
420 S(I,C1)=S(I,C1)+S1
430 IF C(C1)+S1)0 THEN 460
440 PRINT "YOU CAN'T DO THAT, STOCK DROPS BELOW ZERO."
450 PRINT:GOTO 280
460 C(C1)=C(C1)+S1
470 PRINT "THE STOCK FOR COMPANY"C1"NOW COSTS $"C(C1)
480 FOR F=1 TO 750:NEXT F
490 PRINT:IF M(I))=T1 THEN 540
500 NEXT I:PRINT:PRINT
510 GOSUB 600
520 PRINT "DO YOU WISH TO CONTINUE? (Y=YES)";:INPUT A$
530 IF A$="Y" THEN 230 ELSE 1350
540 PRINT:GOSUB 600:PRINT:PRINT
550 PRINT "**************** GAME IS OVER ****************"
560 PRINT "PERSON"I-1"HAS WON WITH"M(I-1)"DOLLARS"
570 PRINT:PRINT
580 PRINT "*** CONGRATULATIONS TO PERSON"I-1
590 GOTO 1350
```

```
600 CLS
610 PRINT TAB(5)"STOCK MARKET TABLE":PRINT
620 PRINT "-------- STOCKS --------";
630 PRINT TAB(27)" PLAYER 1      PLAYER 2       PLAYER 3"
640 PRINT "NM STOCK NAME"TAB(17)"$/SHARE";
650 PRINT TAB(26)"SHR  WORTH    SHR  WORTH    SHR  WORTH"
660 A9=0:FOR I=1 TO 6:PRINT I;TAB(4);
670 IF I=1 THEN PRINT "DIAMONDS INC.";:GOTO 730
680 IF I=2 THEN PRINT "MINI-COMP";:GOTO 730
690 IF I=3 THEN PRINT "MUTUAL MOTORS";:GOTO 730
700 IF I=4 THEN PRINT "MEANCHILD ELEC.";:GOTO 730
710 IF I=5 THEN PRINT "GRANDPA BELL";:GOTO 730
720 PRINT "BROKE FINANCE";:GOTO 730
730 A9=A9+C(I):PRINT TAB(19);C(I);
740 FOR K=1 TO Q
750 PRINT TAB(((K-1)*14)+27);S(K,I);
760 PRINT TAB(((K-1)*14)+33);S(K,I)*C(I);
770 NEXT K:PRINT:NEXT I
780 PRINT:PRINT "HIT -ENTER- TO CONTINUE...";:INPUT F:CLS
790 PRINT TAB(4)"TOTALS";
800 FOR I=1 TO 3:A(I)=0:NEXT I
810 FOR I=1 TO Q:B9=0:C9=0
820 FOR X=1 TO 6
830 B9=B9+S(I,X)
840 C9=C9+(S(I,X)*C(X))
850 A(I)=A(I)+(S(I,X)*C(X))
860 NEXT X
870 PRINT TAB(((I-1)*14)+27);B9;
880 PRINT TAB(((I-1)*14)+31);C9;
890 NEXT I:PRINT
900 PRINT TAB(4);"CASH ON HAND";
910 FOR I=1 TO Q:M(I)=INT(M(I)*100)/100
920 PRINT TAB(((I-1)*14)+29);M(I);:A(I)=A(I)+M(I)
930 NEXT I:PRINT
940 PRINT TAB(4);"TOTAL ASSETS TO DATE";
950 FOR I=1 TO Q:PRINT TAB(((I-1)*14)+29);A(I);
960 NEXT I:PRINT:PRINT
970 PRINT "AVERAGE COST PER SHARE $";
980 A9=A9/6:A9=INT(A9*100)/100
990 PRINT A9;
1000 IF A9-A8()0 THEN 1020
1010 PRINT " NO CHANGE.":GOTO 1060
1020 IF A9-A8(0 THEN 1050
1030 PRINT " UP";A9-A8;"DOLLARS PER SHARE."
1040 GOTO 1060
1050 PRINT " DOWN";A8-A9;"DOLLARS PER SHARE."
1060 A8=A9
1070 PRINT:PRINT:RETURN
1080 CLS
1090 PRINT "THIS IS A GAME OF STOCK MARKET. THE OBJECT OF THIS"
1100 PRINT "GAME IS TO MAKE MORE MONEY THAN YOUR OPPONENT."
1110 PRINT "THIS IS DONE BY BUYING AND SELLING STOCKS FOR A PROFIT."
1120 PRINT
1130 PRINT "THE WAY YOU BUY AND SELL STOCK IS AS FOLLOWS. YOU ROLL TWO"
1140 PRINT "DICE; SAY DICE  A  AND DICE  B. YOU CAN EITHER BUY 'A' SHARES"
1150 PRINT "OF STOCK IN COMPANY 'B' OR BUY 'B' SHARES OF STOCK IN COMPANY"
1160 PRINT "'A'. THE SAME GOES FOR SELLING EXCEPT, OBVIOUSLY, YOU CAN'T"
1170 PRINT "SELL MORE SHARES OF STOCK THAN YOU HAVE. THERE IS ALSO A 5%"
1190 PRINT "BROKERAGE FEE ON ALL MONEY TRANSACTIONS."
1200 PRINT:PRINT "HIT -ENTER- TO CONTINUE...";:INPUT Z:CLS
1210 PRINT "TO MAKE THE PRICE OF A STOCK GO UP OR DOWN REQUIRES THAT"
1220 PRINT "YOU USE YOUR TURN, NOT TO BUY OR SELL, BUT TO RAISE OR LOWER"
1230 PRINT "THE PRICE OF ANY STOCK. THIS IS DONE BY RAISING 'A' STOCK"
1240 PRINT "BY 'B' DOLLARS OR BY DROPPING 'A' STOCK BY 'B' DOLLARS.  IT"
1250 PRINT "ALSO WORKS IN REVERSE; THAT IS YOU RAISE OR LOWER 'B' STOCK"
1260 PRINT "BY 'A' DOLLARS.: PRINT
```

```
1270 PRINT "OPTION 1 IS USED TO BUY OR SELL STOCKS WHILE"
1280 PRINT "OPTION 2 IS USED TO RAISE OR LOWER THE PRICE OF A STOCK."
1290 PRINT "TO SELL OR LOWER A STOCK, TYPE IN A NEGATIVE NUMBER FOR"
1300 PRINT "SHARES.":PRINT
1310 PRINT "EVERYONE STARTS THE GAME WITH"T"DOLLARS, AND THE GAME"
1320 PRINT "ENDS WHEN A PERSON HAS"T1"DOLLARS, CASH ON HAND."
1340 PRINT "GOOD LUCK ! ! ! !":PRINT:PRINT "HIT -ENTER- TO BEGIN...";:INPUT Z:CL
S:RETURN
1350 END
```

TAPLAB

make a readable paper tape



Description

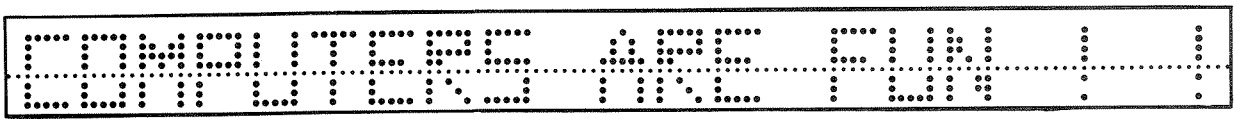
Enter any alphanumeric phrase into the computer, and it will make a readable paper tape of that phrase through your teletype punch.

Variable list

C = Position in data table for information
C1 = First of 5 lines punched to created character
C2 = Second of 5 lines punched to create character
C3 = Third of 5 lines punched to create character
C4 = Fourth of 5 lines punched to create character
C5 = Fifth of 5 lines punched to create character
K = Character count when entering phrase
L( ) = Phrase entered to be punched
S = Option number

Sample run

```
THIS PROGRAM WILL MAKE READABLE PAPER TAPE.


DO YOU WANT THE INSTRUCTIONS?  (1 FOR YES)?1


OPTION          EXPLANATION

  1             PRINTS A BLANK LEADER.
  2             ACCEPTS UP TO 60 ALPHANUMERIC CHARACTERS
                TO BE PUNCHED INTO READABLE TAPE.
  3             EXITS FROM THE PROGRAM.

PUT ON TAPE PUNCH AFTER HEARING BELLS.  THERE IS
A 5 SECOND DELAY AFTER THE BELLS.  WHEN THE PROGRAM
IS DONE PUNCHING, THERE IS ANOTHER DELAY ABOUT 10
SECONDS LONG.  BE SURE TO SHUT OFF PUNCH
DURING THAT INTERVAL.

IF YOU HAVE A PHRASE LONGER THAN 60 CHARACTERS
SIMPLY USE OPTION 2 AS MANY TIMES AS NECESSARY,
BUT BE SURE TO SHUT OFF THE PUNCH WHEN IT'S DONE
PUNCHING OUT EACH 60 CHARACTERS.

ANY CHARACTER ON THE KEYBOARD MAY BE USED.  SPACES
TYPE OUT AS 5 BLANKS.


OPTION?2


INPUT THE PHRASE, NO MORE THAN 60 CHARACTERS.
HIT RUBOUT TO DELETE THE LAST CHARACTER AND
HIT RETURN WHEN DONE WITH THE PHRASE.

COMPUTERS ARE FUN ! !


OPTION?3
```




```
READY.
```

Program listing

TAPLAB

```
100 DIM L(60)
110 CLS
120 PRINT "THIS PROGRAM WILL MAKE READABLE PAPER TAPE."
130 PRINT
140 PRINT "DO YOU WANT THE INSTRUCTIONS? (Y=YES)";:INPUT L$
150 CLS
160 IF L$="Y" THEN 180 ELSE 420
180 PRINT "OPTION","EXPLANATION"
190 PRINT
200 PRINT "  1","PRINTS A BLANK LEADER."
210 PRINT "  2","ACCEPTS UP TO 60 ALPHANUMERIC CHARACTERS"
220 PRINT "   ","TO BE PUNCHED INTO READABLE TAPE."
230 PRINT "  3","EXITS FROM THE PROGRAM."
240 PRINT
250 PRINT "PUT ON TAPE PUNCH AFTER HEARING THE BUZZER. THERE"
260 PRINT "IS A 5 SECOND DELAY AFTER THAT. WHEN THE PROGRAM"
270 PRINT "IS DONE PUNCHING, THERE IS ANOTHER DELAY ABOUT 10"
280 PRINT "SECONDS LONG. BE SURE TO SHUT OFF PUNCH"
290 PRINT "DURING THIS INTERVAL."
300 PRINT:PRINT "HIT -ENTER- TO CONTINUE...";:INPUT Z:CLS
310 PRINT "IF YOU HAVE A PHRASE LONGER THAN 60 CHARACTERS"
320 PRINT "SIMPLY USE OPTION 2 AS MANY TIMES AS NECESSARY,"
330 PRINT "BUT BE SURE TO SHUT OFF THE PUNCH WHEN IT'S DONE"
340 PRINT "PUNCHING THE 60 CHARACTERS."
350 PRINT
360 PRINT "ANY CHARACTER ON THE KEYBOARD MAY BE USED. SPACES"
370 PRINT "TYPE OUT AS 5 BLANKS."
380 PRINT
390 PRINT "HIT -ENTER- TO BEGIN...";:INPUT Z
420 K=0
430 CLS:PRINT "OPTION";:INPUT S
440 PRINT:ON S GOTO 490,520,740
450 PRINT "INCORRECT OPTION, TRY AGAIN.":GOTO 430
490 GOSUB 750
500 FOR I=1 TO 40:PRINT CHR$(0):NEXT I
510 GOTO 660
520 PRINT "INPUT THE PHRASE, NO MORE THAN 60 CHARACTERS."
530 PRINT "HIT -ENTER- WHEN DONE WITH PHRASE.":PRINT
540 INPUT K$
550 GOSUB 750
560 Z=LEN(K$):IF Z)60 THEN 430
570 FOR N=1TOZ:X=ASC(MID$(K$,N,1))
580 C=X-32+1:RESTORE
590 IF C=1 THEN 610
600 FOR I=1 TO C-1:READ C1,C2,C3,C4,C5:NEXT I
610 READ C1,C2,C3,C4,C5
620 PRINT CHR$(C1)
625 PRINT CHR$(C2)
630 PRINT CHR$(C3)
635 PRINT CHR$(C4)
640 PRINT CHR$(C5)
650 NEXT N
660 FOR F=1 TO 1500:NEXT F
670 GOTO 430
740 GOTO 1090
750 FOR I=1 TO 100:OUT255,6:OUT255,0:NEXT I:REM  BUZZER
760 FOR I=1 TO 2500:NEXT I:RETURN
770 DATA 0,0,0,0,0,0,0,95,0,0
780 DATA 0,96,0,96,0,20,62,20,62,20
790 DATA 58,73,127,73,46,96,99,68,83,99
800 DATA 22,41,21,2,5,0,0,96,0,0
```

```
810 DATA 0,0,28,34,65,65,34,28,0,0
820 DATA 42,28,127,28,42,8,8,62,8,8
830 DATA 0,1,7,0,0,0,8,8,8,0
840 DATA 0,0,1,0,0,3,4,8,16,96
850 DATA 127,67,73,97,127,1,1,33,63,1
860 DATA 103,79,73,89,121,73,73,73,73,119
870 DATA 120,8,8,8,127,123,73,73,73,79
880 DATA 127,73,73,73,79,64,64,71,72,96
890 DATA 54,73,73,73,54,120,72,72,72,127
900 DATA 0,0,20,0,0,0,0,2,20,0,0,
910 DATA 0,8,20,34,65,20,20,20,20,20
920 DATA 65,34,20,8,0,112,64,77,72,120
930 DATA 0,0,0,0,0
940 DATA 15,56,72,56,15,127,73,73,73,54
950 DATA 127,65,65,65,65,127,65,65,65,62
960 DATA 127,73,73,73,65,127,72,72,72,64
970 DATA 62,65,69,69,103,127,8,8,8,127
980 DATA 65,65,127,65,65,71,65,127,64,64
990 DATA 127,8,20,34,65,127,1,1,1,1
1000 DATA 127,48,24,48,127,127,48,8,6,127
1010 DATA 127,65,65,65,127,127,72,72,72,120
1020 DATA 127,65,69,67,127,127,88,84,82,113
1030 DATA 121,73,73,73,79,64,64,127,64,64
1040 DATA 127,1,1,1,127,112,12,1,12,112
1050 DATA 127,6,2,6,127,99,54,28,54,99
1060 DATA 120,9,10,12,120,75,77,73,89,105
1070 DATA 127,65,65,65,0,96,16,8,4,3
1080 DATA 0,65,65,65,127,16,32,127,32,16
1090 END
```

TENNIS

game of tennis

Description

Tennis anyone? This program simulates a tennis singles (2 players) match. You play against the computer.

A singles tennis *match* is the best 2 out of 3 *sets*. A *set* is a series of games wherein 1 player has won at least 6 games and in every case has won 2 more than his opponent. The player must win by a *2*-game margin. Normally a set is won by the scores: 6-0, 6-1, 6-2, 6-3, or 6-4. However, a set may be won by scores: 7-5, 8-6, 9-7, etc.

A *game* of tennis is won when the first player wins 4 exchanges of shots (hitting the ball in a position on the court away from the opponent). Again the player must win by a margin of *2* exchanges.

The scoring of tennis is as follows:

The first point (exchange) won is referred to as "15."
The second point won is "30."
The third point won is "40."
The fourth point and final point won is simply "Game."
"Deuce" is when the players are tied at 40 each.
"Advantage" refers to the first point scored after deuce by either player. It is either your or your opponent's advantage.

"Love" means zero in tennis.
The server's score is always referred to first (i.e., 15–40).

In the computer game there are several options open to you, such as your position on the court, placement of the ball on the court, and the speed of the ball. Your option is specified by a number given to you by the computer. You will always be allowed to serve first and backhand and forehands will be assumed. Good luck! The computer has been taught its game by a very famous tennis pro!

Variable list

A9 = Type of serve (first serve)
B = Way in which computer's shot went bad
B9 = Type of serve (second serve)
C = Probability of serving a let serve (first serve)
C9 = Type of shot attempted by player
D = Probability of making the serve (first serve)
G = Probability of serving a let serve (second serve)
H = Probability of making the serve (second serve)
I = Probability of serve not being returned (first shot)
N = Probability of serve not being returned (second shot)
Q = Positioning of player for return of shot
R = Area of court shot aimed for
S = Probability of return being good
U = Way in which player's shot went bad
W = Probability of computer's return being good
Y = Points scored by player
Y1 = Games won by player
Z = Points scored by computer
Z1 = Games won by computer

Sample run

```
TENNIS GAME!

   THIS PROGRAM WILL SIMULATE A TENNIS SINGLES MATCH.
THERE ARE SEVERAL OPTIONS AVAILABLE TO YOU AS TO POSITION,
PLACEMENT, AND SPEED (TYPE) OF SHOT.  THE KEY THAT YOU
USE IS:

POSITIONS  (PLACEMENTS TOO):

1   LEFT BACKCOURT
2   RIGHT BACKCOURT
3   LEFT FORECOURT
4   RIGHT FORECOURT
```

```
SPEED (TYPE) OF SHOTS:

1   FAST SLAM
2   SLOW LOB

ALWAYS SPECIFY YOUR OPTION BY NUMBER.  YOU WILL BE ALLOWED
TO SERVE FIRST IN ALL GAMES.

BACKHANDS AND FOREHANDS WILL BE ASSUMED.


GOOD LUCK!


     SERVE!   TYPE?1
         SERVE IS BAD
         SERVE AGAIN!     TYPE?1
         SERVE IS BAD...DOUBLE FAULT!

    SCORE-POINTS    YOU...ME
                     0    1


     SERVE!   TYPE?1
         SERVE HAS BEEN RETURNED...

WHAT IS YOUR POSITION?4
WHAT TYPE OF SHOT ARE YOU MAKING?2
WHAT PART OF THE COURT ARE YOU AIMING FOR?1

                              YOUR RETURN IS GOOD!

                              COMPUTER'S RETURN IS GOOD!

WHAT IS YOUR POSITION?2
WHAT TYPE OF SHOT ARE YOU MAKING?1
WHAT PART OF THE COURT ARE YOU AIMING FOR?3

                              YOUR RETURN IS GOOD!

                              COMPUTER'S RETURN IS GOOD!

WHAT IS YOUR POSITION?1
WHAT TYPE OF SHOT ARE YOU MAKING?2
WHAT PART OF THE COURT ARE YOU AIMING FOR?2

                              YOUR RETURN IS GOOD!

   NICE SHOT-THE COMPUTER COULDN'T REACH IT

    SCORE-POINTS    YOU...ME
                     1    1


     SERVE!   TYPE?1
         SERVE HAS BEEN RETURNED...

WHAT IS YOUR POSITION?1
WHAT TYPE OF SHOT ARE YOU MAKING?1
WHAT PART OF THE COURT ARE YOU AIMING FOR?4

                              YOUR RETURN IS GOOD!

   NICE SHOT-THE COMPUTER COULDN'T REACH IT

    SCORE-POINTS    YOU...ME
                     2    1
```

```
 SERVE!    TYPE?1
     SERVE IS BAD
     SERVE AGAIN!      TYPE?1
     LET SERVE...TAKE 1
     SERVE AGAIN!      TYPE?1
     SERVE IS GOOD...ACE!

SCORE-POINTS     YOU...ME
                  3    1


 SERVE!    TYPE?1
     SERVE IS BAD
     SERVE AGAIN!      TYPE?1
     SERVE IS BAD...DOUBLE FAULT!

SCORE-POINTS     YOU...ME
                  3    2


 SERVE!    TYPE?1
     SERVE IS BAD
     SERVE AGAIN!      TYPE?1
     SERVE IS BAD...DOUBLE FAULT!

SCORE-POINTS     YOU...ME
                  3    3


 SERVE!    TYPE?1
     SERVE IS GOOD...CAN'T BE RETURNED!

SCORE-POINTS     YOU...ME
                  4    3
-------------------------------------------------------------
          SCORE-GAMES       YOU...ME
                             1     0


 SERVE!    TYPE?
```

Program listing

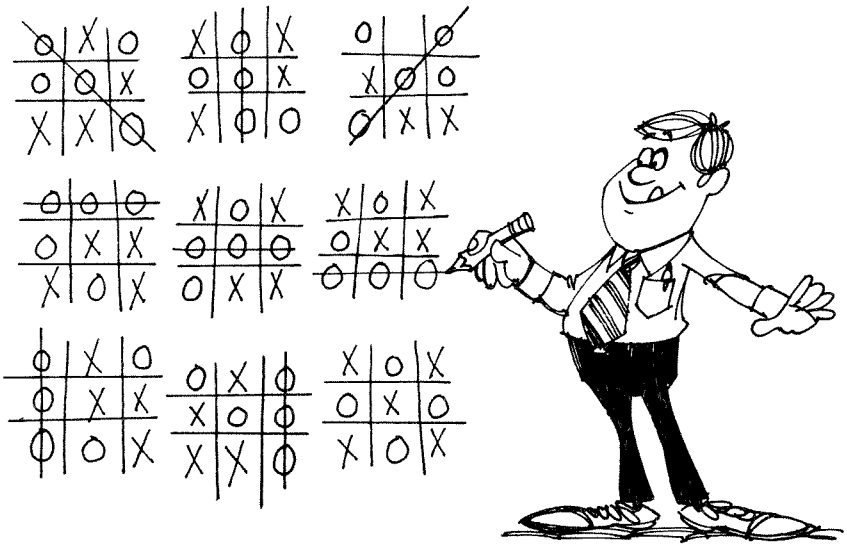
```
100 CLS:PRINT "TENNIS GAME!":PRINT
110 PRINT " THIS PROGRAM  WILL SIMULATE A TENNIS SINGLES MATCH."
120 PRINT "THERE ARE SEVERAL OPTIONS AVAILABLE TO YOU AS TO POSITION,"
130 PRINT "PLACEMENT, AND SPEED (TYPE) OF SHOT. THE KEY THAT YOU"
140 PRINT "USE IS:":PRINT:PRINT "POSITIONS (PLACEMENTS TOO):"
150 PRINT
160 PRINT "1";TAB(5);"LEFT BACKCOURT"
170 PRINT "2";TAB(5);"RIGHT BACKCOURT"
180 PRINT "3";TAB(5);"LEFT FORECOURT"
190 PRINT "4";TAB(5);"RIGHT FORECOURT"
195 PRINT:PRINT "HIT -ENTER- TO CONTINUE...";:INPUT F:CLS
200 PRINT:PRINT "SPEED (TYPE) OF SHOTS:":PRINT
210 PRINT "1";TAB(5);"FAST SLAM":PRINT "2";TAB(5);"SLOW LOB":PRINT
220 PRINT "ALWAYS SPECIFY YOUR OPTION BY NUMBER. YOU WILL BE ALLOWED"
230 PRINT "TO SERVE FIRST IN ALL GAMES.":PRINT
240 PRINT "BACKHANDS AND FOREHANDS WILLL BE ASSUMED.":PRINT
250 PRINT "GOOD LUCK!"
```

```
260 Y=0:Z=0
270 PRINT
280 PRINT
290 PRINT "       SERVE!     TYPE";
300 INPUT A9
310 A=100*RND(0)
320 IF A9=2 THEN 410
330 C=6
340 D=51
350 IF A<C THEN 390
360 IF A<D THEN 590
370 PRINT TAB(10);"SERVE IS BAD"
380 GOTO 440
390 PRINT TAB(10);"LET SERVE..TAKE TWO."
400 GOTO 290
410 C=4
420 D=66
430 GOTO 350
440 PRINT TAB(10);"SERVE AGAIN!      TYPE";
450 INPUT B9
460 E=100*RND(0)
470 IF B9=2 THEN 560
480 G=5
490 H=41
500 IF E<G THEN 540
510 IF E<H THEN 590
520 PRINT TAB(10);"SERVE IS BAD...DOUBLE FAULT!"
530 GOTO 1160
540 PRINT TAB(10);"LET SERVE...TAKE 1"
550 GOTO 440
560 G=3
570 H=76
580 GOTO 500
590 I=100*RND(0)
600 IF I>6 THEN 630
610 PRINT TAB(10);"SERVE IS GOOD...ACE!"
620 GOTO 1140
630 K=100*RND(0)
640 IF A9=2 THEN 700
650 IF B9=2 THEN 700
660 N=61
670 IF K<N THEN 720
680 PRINT TAB(10);"SERVE IS GOOD...CAN'T BE RETURNED!"
690 GOTO 1140
700 N=76
710 GOTO 670
720 PRINT TAB(10);"SERVE HAS BEEN RETURNED..."
730 PRINT
740 O=INT(4*RND(0))+1
750 PRINT "WHAT IS YOUR POSITION";
760 INPUT Q
770 IF O+Q=5 THEN 1110
780 PRINT "WHAT TYPE OF SHOT ARE YOU MAKING";
790 INPUT C9
800 PRINT "WHAT PART OF THE COURT ARE YOU AIMING FOR";
810 INPUT R:PRINT
820 S=100*RND(0)
830 IF C9=2 THEN 860
840 IF S<81 THEN 940
850 GOTO 870
860 IF S<91 THEN 940
870 U=4*RND(0)
880 PRINT TAB(30);"YOUR RETURN IS BAD..."
890 IF U<2 THEN 920
900 PRINT TAB(33);"HIT OUT-OF-BOUNDS"
910 GOTO 1160
920 PRINT TAB(33);"HIT INTO NET"
930 GOTO 1160
940 PRINT TAB(30);"YOUR RETURN IS GOOD!"
```

```
950 PRINT:A1=INT(4*RND(0))
960 IF R+A1=5 THEN 1130
970 W=100*RND(0)
980 IF C9=2 THEN 990
990 IF W<84 THEN 1090
1000 GOTO 1020
1010 IF W<84 THEN 1090
1020 B=4*RND(0)
1030 PRINT TAB(30);"COMPUTER'S RETURN IS BAD..."
1040 IF B<2 THEN 1070
1050 PRINT TAB(33);"HIT OUT-OF-BOUNDS"
1060 GOTO 1140
1070 PRINT TAB(33);"HIT INTO NET"
1080 GOTO 1140
1090 PRINT TAB(30);"COMPUTER'S RETURN IS GOOD!"
1100 GOTO 730
1110 PRINT "   NICE TRY YOU WERE UNABLE TO REACH THAT SHOT-COURT #"O
1120 GOTO 1160
1130 PRINT "   NICE SHOT-THE COMPUTER COULDN'T REACH IT"
1140 Y=Y+1
1150 GOTO 1170
1160 Z=Z+1
1170 PRINT
1180 PRINT TAB(5);"SCORE-POINTS   YOU...ME"
1190 PRINT TAB(21);Y;"  ";Z
1200 IF Y=4 THEN 1230
1210 IF Z=4 THEN 1250
1220 GOTO 270
1230 Y1=Y1+1
1240 GOTO 1260
1250 Z1=Z1+1
1260 FOR F=1 TO 60:PRINT "-";:NEXT F:PRINT
1270 PRINT TAB(15);"SCORE GAMES     YOU...ME"
1280 PRINT TAB(32);Y1;"   ";Z1
1290 IF Y1=6 THEN 1320
1300 IF Z1=6 THEN 1350
1310 GOTO 260
1320 PRINT
1330 PRINT "**** CONGRATULATIONS...YOU WON ****"
1340 GOTO 1370
1350 PRINT
1360 PRINT "**** AS PREDICTED, THE COMPUTER IS AGAIN TRIUMPHANT ****"
1370 PRINT
1380 PRINT "LET'S PLAY AGAIN SOME TIME. RIGHT NOW I NEED SOME"
1390 PRINT "COOLING FROM MY FANS!!   BYE!!"
1400 END
```

TIC-TAC-TOE

game of tic-tac-toe



Description

An old favorite is created in this program. The game of tic-tac-toe is printed out and you play against the computer. Remember, the computer has a memory and won't lose twice the same way!

Variable list

C = Number of moves made in game
C1 = Number of moves made by player
C( ) = Positioning of board (1 for computer, 2 for player)
E = Error flag to determine if test made is valid (0 means no error)
G = Game number
M = Moves of players
W( ) = Winning moves of player for each game
X1 = Number of games won by player
X2 = Number of ties
Y1 = Number of games won by computer

Sample run

```
THIS IS A GAME OF TIC-TAC-TOE.

I'M 'O', YOUR 'X'.
```

```
POSITIONS ARE:

1  2  3
4  5  6
7  8  9


I'LL GO FIRST.

MY MOVE IS: 5

 -  -  -
 -  O  -
 -  -  -

WHAT IS YOUR MOVE?1
MY MOVE IS: 3

 X  -  O
 -  O  -
 -  -  -

WHAT IS YOUR MOVE?7
MY MOVE IS: 4

 X  -  O
 O  O  -
 X  -  -

WHAT IS YOUR MOVE?6
MY MOVE IS: 8

 X  -  O
 O  O  X
 X  O  -

WHAT IS YOUR MOVE?2
MY MOVE IS: 9

 X  X  O
 O  O  X
 X  O  O

IT'S A TIE!!

ANOTHER GAME?   (1=YES)?1


POSITIONS ARE:

1  2  3
4  5  6
7  8  9


I'LL GO FIRST.

MY MOVE IS: 3

 -  -  O
 -  -  -
 -  -  -
```

```
WHAT IS YOUR MOVE?9
MY MOVE IS: 5

 -  -  O
 -  O  -
 -  -  X

WHAT IS YOUR MOVE?7
MY MOVE IS: 8

 -  -  O
 -  O  -
 X  O  X

WHAT IS YOUR MOVE?2
MY MOVE IS: 4

 -  X  O
 O  O  -
 X  O  X

WHAT IS YOUR MOVE?6
MY MOVE IS: 1

 O  X  O
 O  O  X
 X  O  X

IT'S A TIE!!

ANOTHER GAME?   (1=YES)?0


FINAL SCORE:

YOU 0       ME 0       TIE(S) 2



READY.
```

Program listing

TICTAC

```
100 DIM C(9),W(72,5)
110 CLS:PRINT "THIS IS A GAME OF TIC-TAC-TOE.":PRINT
120 PRINT:PRINT "I'M 'O', YOU'RE 'X'.":PRINT
130 PRINT:PRINT "THE POSTIONS ARE :":PRINT
140 PRINT "1  2  3"
150 PRINT "4  5  6"
160 PRINT "7  8  9"
165 PRINT:PRINT "HIT -ENTER- TO BEGIN...";:INPUT Z:CLS
170 G=G+1
180 IF G()72 THEN 190 ELSE G=1
```

```
190 FOR I=1 TO 9:C(I)=0:NEXT I:C=0:C1=0
200 RESTORE:IF RND(0)<.5 THEN 220
210 PRINT "I'LL GO FIRST.":PRINT:GOTO 300
220 PRINT "YOU GO FIRST.":PRINT
225 FOR Z=1 TO 1000:NEXT Z
230 PRINT:PRINT "WHAT IS YOUR MOVE";:INPUT M:CLS
240 GOSUB 650
250 IF E=0 THEN 270
260 PRINT "ILLEGAL MOVE.":GOTO 230
270 C(M)=2:GOSUB 780:C=C+1
280 C1=C1+1:W(G,C1)=M
290 IF E=1 THEN 540 ELSE IF C=9 THEN 540
300 M=1
310 IF C(M)<>0 THEN 330 ELSE C(M)=1:GOSUB 780
320 IF E=1 THEN 500 ELSE C(M)=0
330 M=M+1:IF M<>10 THEN 310
340 M=1
350 IF C(M)<>0 THEN 370 ELSE C(M)=2:GOSUB 780
360 IF E=1 THEN 490 ELSE C(M)=0
370 M=M+1:IF M<>10 THEN 350
380 IF G=1 THEN 450 ELSE I=1
390 E=0:FOR M=1 TO C1
400 IF W(I,M)=W(G,M) THEN 410 ELSE E=1
410 NEXT M:IF E=1 THEN 440
420 M=W(I,M+1):IF M=0 THEN 440
430 IF C(M)=0 THEN 490
440 I=I+1:IF I<>G THEN 390
450 IF RND(0)<.4 THEN 480
460 READ M:IF C(M)<>0 THEN 450 ELSE 490
470 DATA 5,7,3,9,1,6,8,4,2
480 M=INT(9*RND(0))+1:IF C(M)=0 THEN 490 ELSE 480
490 C(M)=1
500 PRINT "MY MOVE IS:";M
510 PRINT:GOSUB 690:GOSUB 780
520 IF E=1 THEN 550
530 C=C+1:IF C=9 THEN 550 ELSE 230
540 PRINT:GOSUB 690
550 PRINT:IF Q=0 THEN 580 ELSE IF Q<>1 THEN 570
560 PRINT "I WON!!!":Y1=Y1+1:GOTO 590
570 PRINT "YOU WON!!!":X1=X1+1:GOTO 600
580 PRINT "IT'S A TIE!!!":X2=X2+1
590 FOR I=1 TO 5:W(G,I)=0:NEXT I:G=G-1
600 PRINT:PRINT "ANOTHER GAME? (Y=YES)";:INPUT A$
610 CLS:IF A$="Y" THEN 130
620 PRINT:PRINT "FINAL SCORE:":PRINT
630 PRINT "YOU"X1"     ME"Y1"     TIE(S)"X2
640 PRINT:PRINT:GOTO 910
650 E=0:IF M<1 THEN 670 ELSE IF M>9 THEN 670
660 IF C(M)=0 THEN 680
670 E=1
680 RETURN
690 FOR I=1 TO 9
700 PRINT " ";:IF C(I)<>0 THEN 720
710 PRINT "-";:GOTO 740
720 IF C(I)<>1 THEN 730 ELSE PRINT "O";:GOTO 740
730 PRINT "X";
740 IF I/3<>INT(I/3) THEN 760
750 PRINT:GOTO 770
760 PRINT " ";
770 NEXT I:RETURN
780 E=0:Q=C(5):IF Q=0 THEN 840
790 IF C(1)<>Q THEN 810 ELSE IF C(9)<>Q THEN 810
800 E=1:RETURN
810 IF C(3)<>Q THEN 820 ELSE IF C(7)=Q THEN 800
820 IF C(2)<>Q THEN 830 ELSE IF C(8)=Q THEN 800
830 IF C(4)<>Q THEN 840 ELSE IF C(6)=Q THEN 800
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840 Q=C(1):IF Q=0 THEN 870
850 IF C(2)<>Q THEN 860 ELSE IF C(3)=Q THEN 800
860 IF C(4)<>Q THEN 870 ELSE IF C(7)=Q THEN 800
870 Q=C(9):IF Q=0 THEN 900
880 IF C(3)<>Q THEN 890 ELSE IF C(6)=Q THEN 800
890 IF C(7)<>Q THEN 900 ELSE IF C(8)=Q THEN 800
900 Q=0:RETURN
910 END
```

APPENDIX: LITERATURE

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